TECHNOLOGY DEPT.

FEBRUARY 1, 1958

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Telephone Engineer

AND MANAGEMENT

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THE TELEPHONE INDUSTRY MAGAZINE

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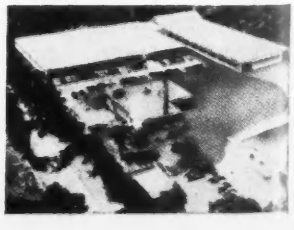

ABOUT THIS ISSUE

THERE is a "get busy" suggestion in the TE&M editorial on *page* 25. We have titled the editorial "*Once In Taxes — Again In Rates*" for we believe that title is an exact description of the load you and subscribers will carry if the utility reimbursement provision of the Federal Highway Act of 1956 is amended or repealed. We believe the editorial tells a story your subscribers should read. If you agree and want copies to send to your subscribers let us know how many and we'll get busy.

AUTHOR *J. B. Spratley* concludes his discussion of "*Transmission — Our Principal Product*" with some interesting and informative facts on — (1) the fundamental basis for the "via net loss" plan for switching; (2) impedance control; and (3) the effect of carrier on the general toll switching plan. Part One of Mr. Spratley's article appeared in the January 15 issue.

IN OUR January 1 issue, Part One of *Ted Talmage's* article titled "*Hand In Hand*" proved that a telephone job is made up of two parts: (1) things one must be able to do, and (2) things one must know in order to be proficient in his work. In this issue he concludes his three-part article with a description of a foreman who possessed that "scarcest of all knacks — the ability to explain involved subjects in a simple, straightforward manner."

YOU WILL find Part II of TE&M's new feature "Lessons In Management" on page 30. If you have been wondering "what's wrong" when the business causes you to have a bad case of nerves, author *Ernest W. Fair* has a few suggestions that just might help you find the cause of the trouble.

OUR New Products' Editor, *Dick Reynolds*, has revamped his department and to give it a good start he writes about: — (1) a new electronic sentry that automatically detects a wide variety of abnormal conditions; (2) a new conduit bender; (3) a new hollow-wall anchor, and several other products that will help you do your telephone job better and faster.

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Telephone Engineer

AND MANAGEMENT

THE TELEPHONE INDUSTRY MAGAZINE

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FRONT COVER

Arthur N. Meyers, president, Big Eddy Telephone Co., Narrowsburg, N. Y., uses old type wall telephone, many of which are still in service on his network. Alongside is a display used in helping to sell stock to finance the company's improvement and expansion program. Included is original switchboard used by the company, with photo of a modern dial exchange pictured above. In the center is a working dial demonstration unit designed to acquaint public with equipment required for dial telephone service.

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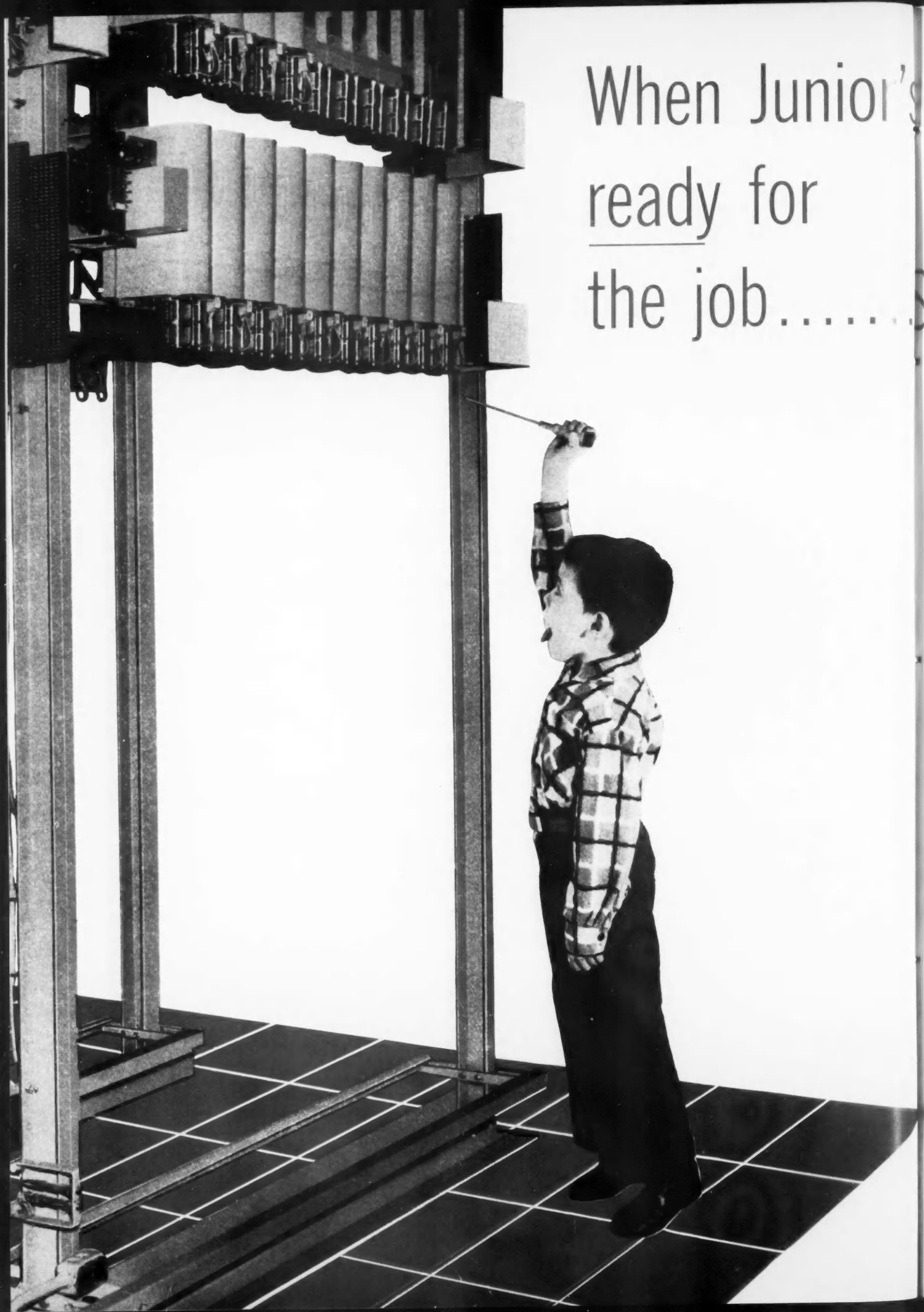
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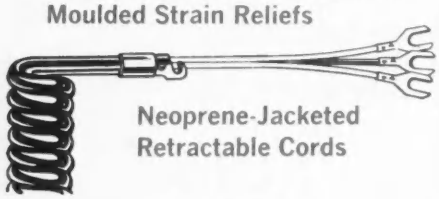

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MINNESOTA Telephone Association, St. Paul Hotel, St. Paul, Feb. 17-19, 1958.

TEXAS Telephone Association, Baker Hotel, Dallas, March 3-4, 1958.

KENTUCKY Telephone Association, Phoenix Hotel, Lexington, March 4, 1958.

IOWA Independent Telephone Association, Hotel Fort Des Moines, Des Moines, April 8-9, 1958.

NORTH DAKOTA Telephone Association, Gardner Hotel, Fargo, April 14-15, 1958.

OHIO Independent Telephone Association, Deshler Hilton Hotel, Columbus, April 14-16, 1958.

NEBRASKA Telephone Association, Paxton Hotel, Omaha, April 22-23, 1958.

INDIANA Telephone Association, Claypool Hotel, Indianapolis, May 7-8, 1958.

WISCONSIN State Telephone Association, Plankinton House Hotel, Milwaukee. May 14-15, 1958.

ILLINOIS Telephone Association, Hotel Pere Marquette, Peoria, May 21-22, 1958.

MISSOURI-KANSAS Telephone Associations, Town House, Kansas City, Kans., May 26-27, 1958.

PENNSYLVANIA Independent Telephone Association, Bedford Springs Hotel, Bedford, May 26-28, 1958.

MAINE, NEW HAMPSHIRE, VERMONT Telephone Associations, Somerset Hotel, Rockland, Maine, June 3-5, 1958.

CALIFORNIA Independent Telephone Association, Sheraton-Palace Hotel, San Francisco, June 4, 5, 6, 1958.

NEW YORK Telephone Association, Scaroon Manor, Schroon Lake, June 16-18, 1958.

MICHIGAN Independent Telephone Association, Pantlind Hotel, Grand Rapids, Sept. 9, 10, 11, 1958.

ARKANSAS Telephone Association, Hot Springs, (Hotel To Be Announced), Sept. 15-16, 1958.

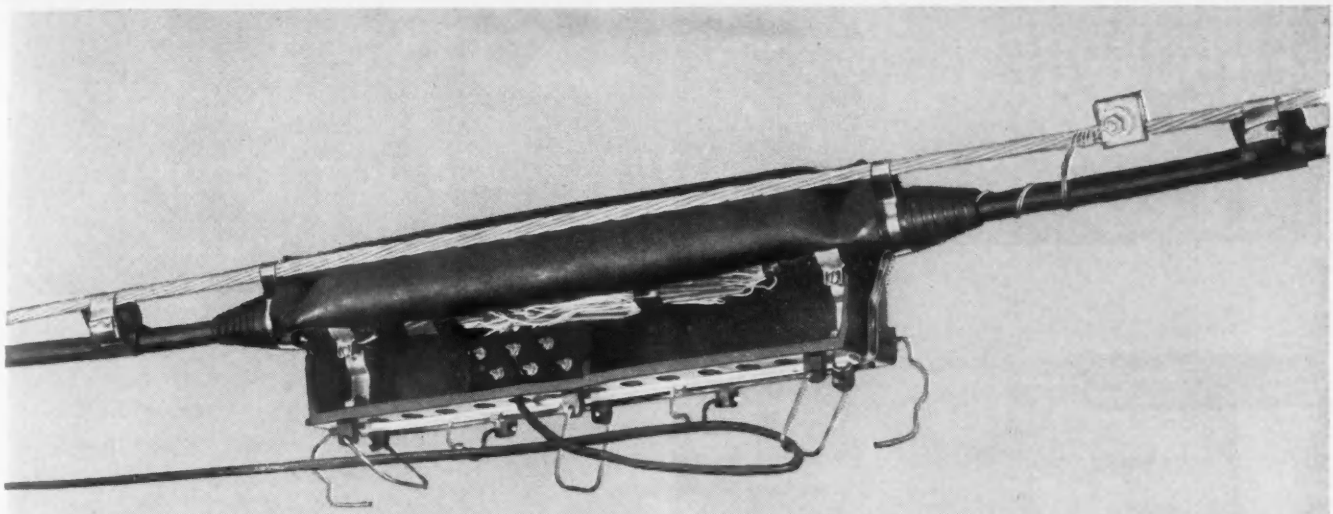
ROCKY MOUNTAIN Telephone Association, Hotel Utah, Salt Lake City, Utah, Sept. 17-19, 1958.

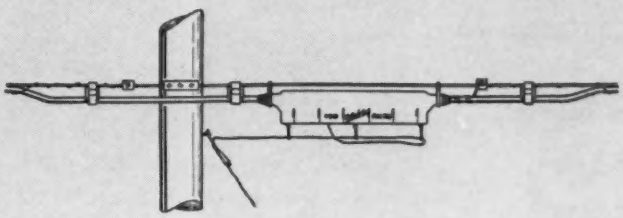
UNITED STATES Independent Telephone Assn., Conrad Hilton Hotel, Chicago, Oct. 13, 14, 15, 1958.

VIRGINIA Telephone Association, Roanoke Hotel, Roanoke, Oct. 30-31, 1958.

OKLAHOMA Telephone Association, Huckins Hotel, Oklahoma City, Nov. 5-6, 1958.

ALASKA Telephone Association, Baranof Hotel, Juneau, Alaska, Nov. 12-13, 1958.





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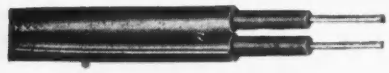
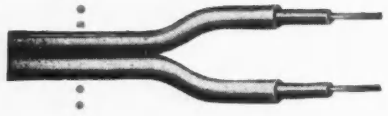


Twisted Pair

Parallel Reinforced



Parallel Figure 8

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- MOSTLY ABOUT PEOPLE across the editor's desk

John L. Sattler

THANKS to *Fred Twigg*, secretary of the Michigan Independent Telephone Association, we are keeping abreast of the news in Michigan with items that have a real human interest. Like his note of a few days ago enclosing a picture of *John L. Sattler*, manager of the Leelanau Telephone Co., with a sketch of the history of John, his wife and son Medford.

In 1948 the Sattlers "took over" that company consisting of 3 magneto exchanges, serving 322 customers. As of June 30, 1957 the company had assets of $322.948.02, a national class-A service rating, and was serving 1,389 telephones through 5 exchanges — all dial. No wonder Michigan Independents are impressed with the Sattlers!

North Dakota Convention

WE ARE GLAD to see the North Dakota Telephone Association has scheduled its 1958 convention. *Gordon Brown*, secretary-treasurer wrote us in January that April 14-15 are the dates and Gardner Hotel, Fargo is place. The North Dakota group is planning a 50th anniversary meeting this year and its members are going all out to make the meeting a most successful one.

"Crystal Ball"

WE HAVE been watching economic signs and indicators since the drop in business has had so many economists gazing into their crystal balls. It reminds us of the experiences of many telephone companies when these ups and downs in the economy have taken place. It usually takes a year for the effects of a recession to hit the telephone industry and by that time conditions have changed for the better. The announcements of many Independent companies plus those of the larger companies seem to indicate to us they are going full steam ahead during 1958. And well they must if they expect to serve the population in the coming decade. Millions will be spent on growth in our industry during 1958 — many hundreds of millions! Close to $2\frac{1}{2}$ billion in fact!

To raise that much money will be quite a problem. The Independents through the United States Independent Telephone Association have been doing a wonderful job of advertising their companies as well as the telephone business in several of the influential magazines in our country. Picture, if you will, the availability of money a few short years ago before an advertisement on the advantages and services of the Independents had appeared. The results are evident!

1958 Conventions

THE 1958 Telephone conventions will be started this month of February at St. Paul, Minn. when the Minnesota Telephone Association will convene.

We have always been quite impressed by the program and arrangements made for those in attendance by the Minnesotans, as they leave very little to chance. For one to see a public relations firm working for the Association to see that all newspapers in Minnesota carry convention news, plus many smaller details, not left to chance, is quite refreshing to this writer who attends an average of 20 or more conventions a year. We like the way the officers and directors of the Minnesota Telephone Association merchandise and arrange their annual conclave.

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industry newsletter

Industry's Planned Construction Indicates No Slow Down In Sight

WITH 1958 budgets completed, nation's telephone companies made news last month with stories of their planned construction projects. Here are a few samples: (1) FCC approved $60,000,000 Bell System construction plan covering intercity construction projects of AT&T Co.'s Long Lines Dept., 17 associated Bell Companies and Carolina Tel. & Tel. Co.; (2) Southern Nevada Tel. Co. announced start of $5,500,000 expansion program; (3) Ohio Bell Tel. Co. announced its 1958 construction program will cost estimated $85,000,000; it spent $87,000,000 in '57; anticipates spending $250,000,000 on construction in 3-year period starting with 1958; (4) Illinois Bell Tel. Co., will spend $150,000,000 on expansion and improvement in '58; (5) Pacific Tel. & Tel. will spend $300.6 million to expand and improve service in '58 and '59; $30,000,000 will be spent on land and buildings, about $200,000,000 for equipment and telephones, and $70,000,000 will go for exchange and toll equipment.

Wisconsin Tel. Co. Asks FCC Approval of Two Acquisitions

WISCONSIN Tel. Co. asked FCC certification for its acquisitions of Menomonee Falls (Wis.) Tel. Co. and Lisbon Tel. Corp. Companies, owned by Mr. and Mrs. Ralph S. Odegard, serve more than 3500 subscribers through exchanges at Menomonee Falls, Germantown and Sussex. Proposed purchase price is $645,000. . . . Indiana Bell Tel. Co. purchased Citizens Tel. Co., Inc., Martinsville, Ind. Citizens Tel. served 365 subscribers. Purchase price was approximately $10,000.00. . . . Union Tel. Co. discontinued service at Cowan and Aroma, Ind., and merged properties into parent company, Indiana Bell Tel. Co.

Minnesota Railroad & Warehouse Commission has approved following property transfers: New London Tel. Co. purchased New London-Norway Lake Tel. Co. and Nickel Tel. Co.; (2) Polar Rural Tel. Mutual Aid Corp. purchased Robbin Rural Tel. Co.; (3) Johnson Tel. Co., Inc., purchased Lima Township Tel. System, Smoky Hollow Township Tel. Co., Ramer Township Tel. Co., and Thunder Lake Township Tel. Co.; (4) Paul Bunyan Rural Tel. Co-op purchased telephone property of Minneapolis, Red Lake & Manitoba Railway Co.

REA's 1957 Telephone Loans Bring Loan Total to $431,000,000

LAST MONTH U. S. Department of Agriculture reported REA made loans to bring new and improved service to 155,000 subscribers in calendar year 1957, increasing to 940,000 the number of farm families and other rural subscribers who have benefited or will benefit from REA financing.

REA approved estimated $80 million in rural telephone loans. In 1956 loan approvals amounted to $82 million. Since start of its telephone loan program in 1949, REA has approved some $431 million in telephone loans to borrowers in 44 states and Alaska. Of this amount, about $266 million has been advanced, including an estimated $78 million in 1957.

The telephone borrowers paid some $5.2 million in principal and interest in 1957. Over life of program they have repaid approximately $6.1 million on principal, including slightly more than $500,000 paid in advance, and about $4.2 million in interest. Telephone loan payments in arrears decreased by about 29 percent in 1957. Principal and interest payments overdue by more than 30 days amounted to $382,000 on December 1, 1957. At the beginning of the year, they amounted to $535,000. Seventy-five rural telephone organizations received initial REA loans in 1957, increasing total number of borrowers to 578. Of these 373 are Independent companies and 205 are cooperatives.

REA Telephone Loans

RURAL Electrification Administration recently approved following rural telephone loans: Nelson Tel. Co-op., Durand, Wis., $238,000, second loan. William Weisenbeck is pres.; Bryon C. Dale is mgr. of the Nelson Tel. Co-op. . . . Trenton (Ga.) Tel. Co., Trenton, Georgia, $61,000 loan. Jules A. Case is pres.; W. R.

Tatum is mgr. of Trenton Tel. Co. . . . Baltic (S. D.) Co-op. Tel. Co., $116,000, second loan. Joseph N. Ausan is pres. of Baltic Co-op. Tel. Co.; Bennie C. Ronsdahl is mgr. . . . Sunnyside (Ore.) Tel. Co., Sunnyside, Oregon, $562,000, first loan. Lambert D. Miller is pres. & mgr. of Sunnyside Tel. Co. . . . Scandia-Marine Tel. Corporation, Scandia, Minn., $347,000, first loan. Eugene L. Beyl is pres. & mgr. of Scandia-Marine Tel. Corp.

BSDA Expects Communications Industry To Spend $2½ Billion In 1958

COMMUNICATIONS industry expenditures in 1958 will show a "slight drop to $2.5 billion" from the 1957 total, the Business & Defense Services Administration, US Department of Commerce, forecasts in its annual outlook for major industries.

Total factory output for the electronics industry for 1958 is expected to be up about 5% from the $7 billion business the industry did in 1957, according to the BDSA report. "This would represent the lowest rate of increase since Korea," according to the report.

Southern New England Tel. Sees Record '57 Gross, Net

SOUTHERN New England Tel. Co., will show record gross revenues and net income for 1957, George G. Copeland, treasurer reported last month. Copeland said gross will top $100 million for first time and may reach $108 million. Net profit will be in excess of $13 million, or $2.25 a share on average number of shares outstanding during year, up from $2.19 a share on smaller number outstanding in 1956. Capital stock was increased in fall of '57 by sale of 1,358,254 additional shares. For 1956, Southern New England Tel. earned $11,894,000 on operating revenues of $97,929,000.

People In The News

VERN E. LARSON, director, v. p. and gen. mgr. of United Tel. Co., of N. J. has been elected to similar posts with United Tel. Co. of the Carolinas. He succeeds John E. Clive. . . . L. R. Thomas, named supt. of communications systems by Atchison, Topeka & Santa Fe Railroad. He was electronics engineer. . . . Paul A. Gorman named v. p. — operations, New Jersey Bell Tel. Co. He succeeds John B. Rees who retired. Paul R. Brousse, formerly v. p. — finance succeeds Gorman as v. p. — mfg. at Western Electric Co. Charles D. Dugan succeeds Gorman as v. p.-finance; Frank J. Hammel, formerly v. p.-telephone sales. W. E. Co., was elected a v. p. and named v. p.-comptroller.

Henry T. Inman, v. p.-merchandising, Bell Tel. Co. of Pa., named v. p.-public relations. He succeeds Harold S. LeDuc who retired. George Ireland succeeds Inman. . . . Southwestern Bell Tel. Co., has elected 5 new vice presidents. New v. p.'s are gen. mgrs. of the five operating areas of S. W. Bell; Warren E. Bray, Ark.; J. Hardin Smith, Kans.; Edward G. Greber, Mo.-Ill.; H. B. Groh, Okla.; R. A. Goodson, Texas. . . . W. Elmer Pothen, joined administration dept. of AT&T Co., New York City. He was assistant v. p.-merchandising & sales, N. W. Bell Tel. Co.

Gordon Farrell, pres., British Columbia Tel. Co. and North-West Tel. Co. has announced following appointments: R. J. Mitchell, chief engineer B. C. Tel. named assistant v. p.-staff engineering; B. R. Tupper, v. p.-gen. mgr. North-West Tel., named chief engineer B. C. Tel.; M. E. Green, chief engineer Northwest Tel., named radio engineer B. C. Tel.; C. J. McLean, executive assistant, N. W. Tel. Co., named mgr. of N. W. Tel.

Clark Mull, mgr., Knightstown (Ind.) Tel. Co., since 1950, has been elected to board of directors of the Indiana Telephone Association. Mull is a veteran telephone man. For several years he was in the general accounting department of the Public Service Co. of Indiana. Prior to this he was employed by Indiana Bell Tel. Co. . . . James E. Delzell has been appointed methods administrator for General Tel. Service Corp., New York City. Delzell has been plant accountant for General Tel. Co. of Michigan.

NARUC Has Local Telephone Rate, Separations Manuals Available

REVISED compilation of local service telephone rates, as of last June 30, has been completed by Exchange Rates Subcommittee of National Association of Railroad & Utilities Commissioners, and is available from NARUC headquarters at $2 per set. Manual covers Bell System rates in all states, and Independents serving cities of 50,000 or more population. Revised telephone separations manual, approved at last year's NARUC convention, is now available. Price of separations maual also is $2 a copy.

Partial Change In Station Accounting Allowed By Internal Revenue

THE U. S. Independent telephone Association (USITA) has been advised by Internal Revenue Service (IRS) that class A and B telephone companies may, for tax purposes, change from the retirement to the amortization method of accounting for station equipment, but are not permitted to switch to the depreciation method. USITA had raised the question about a changeover to the depreciation method after the adoption of simplified or "cradle-to-grave" accounting for telephone station equipment by the FCC and a number of state regulatory commissions. IRS declared "It is considered that the retirements from account 232 (station connections) are not due to causes which may be recognized as justifying allowance for depreciation under the Internal Revenue Code, hence it is not considered proper to allow depreciation on this account."

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Lucian W. Spencer

Lucian W. Spencer
President

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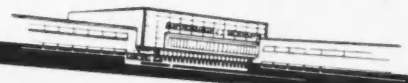

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February 1, 1958

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Very truly yours,

D. H. DEAVER
President

A MEMBER OF THE GENERAL TELEPHONE SYSTEM

Washington NEWSLETTER

Weeks Opposes Utility Reimbursement Provision In Federal Highway Act

AMENDMENT or possible repeal of that section of the highway construction act of 1956 providing for reimbursement to utilities for the costs of relocating facilities necessitated by the road building program was indicated during testimony by Secretary of Commerce Sinclair Weeks before the Senate Public Roads subcommittee during hearings that began before the second session of the 85th Congress was even a week old.

The question of the "intent of Congress" when it incorporated the reimbursement principle in the 1956 legislation was raised during the hearings after Mr. Weeks, in a prepared statement, told the subcommittee that his office was preparing legislation to modify the reimbursement provisions in the law.

This development came with some surprise although there have been reports that some of the state highway departments have been working to get the reimbursement principle either removed or modified considerably, and an official of the Bureau of Public Roads stated almost a year ago that studies were being made aimed at some modifications in the reimbursement practice.

Commerce Secretary Weeks and Federal Highway Administrator Bertram D. Tallamy both voiced opposition to the reimbursement principle during testimony before the Senate group headed by Sen. Albert Gore (D., Tenn.), and in his prepared statement Mr. Weeks also said he feels "Congress should give consideration to the problem of whether and the extent to which utility facilities should be permitted to occupy the rights-of-way of highways on the interstate system." He said his office is also drafting legislation on this subject, based on the question of safety factors.

On the subject of reimbursement to utilities for the cost of relocating facilities, Mr. Weeks flatly opposed such compensation, and then stated that since enactment of the 1956 highway act — which expressly authorizes the use of federal-aid funds for reimbursement of the cost of relocating utilities facilities — 16 states have passed laws providing for such reimbursement and that of these 10 relate to reimbursement only for those roads constructed under provisions of the 1956 law.

To this statement, Sen. Francis Case (R., S. Dak.), declared that it was "not the intent of the 1956 act to pay cost of utility relocation where it applies only to the interstate system . . . The 10 state laws are not in accord with the intent of the 1956 act."

Declaring that under such circumstances he plans to introduce a bill to amend that portion of the act — "maybe it should be repealed" — Mr. Case advised the Federal Highway Administration to "go slow" in approving requests for funds from the 10 states.

Sen. Roman Hruska (R., Nebr.) recalled that during the lengthy discussion of the highway bill two years ago "it was recognized a great burden was on the utility and the rate structure of the utility may be affected by a program of such tremendous scope" as the $37.6 billion highway building program.

The final version of the relocation provisions to be contained in the bill finally passed by Congress in the summer of 1956, incidentally, states:

"Section 110. (a) Subject to the conditions contained in this section, whenever a state shall pay for the cost of relocation of utility facilities necessitated by the construction of a project on the federal aid primary or secondary systems or on the national system of interstate highways, including extensions thereof within urban areas, federal funds may be used to reimburse the state for such cost in the same proportion as federal funds are expended on the project; provided, that federal funds shall not be apportioned to the states under this section when the payment to the utility violates the law of the state or violates a legal contract between the utility and the state.

(b) For the purposes of this section, the term utility shall include publicly, privately, and cooperatively owned utilities.

"(c) For the purposes of this section the term 'cost of relocation' shall include the entire amount paid by such utility properly attributable to such relocation after deducting therefrom any increase in the value of the new facility and any salvage value derived from the old facility."

The intent of Congress in adopting this section was spelled out by the House-Senate conference committee in its report on the federal-aid highway bill in the summer of 1956 when it stated: —

"The bill as passed by the House and recommended and accepted by the conferees recognizes the equity of reimbursing utilities for the cost of relocating facilities when required for federal-aid highway projects. Further, this section makes it clear that it is the intention of the

federal government to assume its proportionate share of utility relocation costs whenever a state allows such costs."

Discussing the reimbursement principle in his statement to the subcommittee, Mr. Weeks declared:

"Under the Constitutions of the United States and the states, when private property is taken for a public use, just compensation must be paid to the owner. Many utilities are located upon real property owned by the utilities, and in which the public has no right or title. When such property is taken for highway or other public purposes, the utilities should and must be justly compensated. Federal-aid funds are available for participation in the costs of highway rights-of-way, and when it becomes necessary to acquire property for this purpose from utilities, federal-aid funds participate to the same extent as if the property were owned by a private individual. In cases where the cost of relocating utility facilities is found to be a proper measure of just compensation for property rights taken for the right-of-way of federal-aid highway, federal-aid funds can and should participate in such costs.

"I do not believe, however, that federal-aid funds should participate in the cost of relocating utility facilities where no vested property is taken, and the utility is not entitled to compensation under constitutional provisions.

"A great many utility facilities occupy the rights-of-way of public highways by permission of the states. Ordinarily, the utilities contributed nothing to the cost of acquiring the rights-of-way, paid nothing for the privilege of installing and maintaining their facilities thereon, and acquired no vested property interest in the rights-of-way.

"The occupancy of highway rights-of-way by public utilities is usually subject to the condition that the facilities not interfere with public travel, and prior to the enactment of the federal-aid highway act of 1956, the great majority of states required the utilities to bear the cost of relocating their facilities when such relocation was necessary to permit improvement of the highway.

"Since the enactment of the federal-aid highway act of 1956, which increased the federal share of the cost of constructing the interstate system to 90%, and up to 95% in public land states, and expressly authorized the use of federal-aid funds for reimbursement of the cost of relocating utility facilities, a significant reaction has occured in many state legislatures.

"During 1956 and 1957, legislation which would provide for payment by the state of the cost of relocating public utility facilities was considered by the legislative assemblies of 40 states. Such legislation was given favorable consideration in 22 states, but was vetoed in six states, so that the legislation became law in 16 states. Under these 16 enactments, only one state will pay the cost of utility facilities on all state-maintained highways. Five of the enactments relate to all federal-aid projects and 10 relate to projects on the interstate system only, where the federal share of the cost is at least 90%.

"This drastic change in existing practices was not contemplated when the federal-aid highway act of 1956 was enacted. The amount of funds authorized by the federal-aid highway act of 1956 was not determined upon the basis of assuming the general obligation to pay the cost of relocating utility facilities within the highway rights-of-way.

"If federal-aid funds continue to be available to reimburse the states for the cost of relocating utility facilities, federal expenditures for that purpose will increase substantially, with the result that correspondingly less will be available for the construction of highways. We also are now considering the preparation of draft legislation on this subject."

In asking that Congress give consideration to the problem of whether and the extent to which utility facilities should be permitted to occupy the rights-of-way of highways on the interstate system, the Commerce Secretary commented:

"The geometric and construction standards adopted for the interstate ssytem provide for highway design speeds of at least 70 miles per hour for flat terrain, 60 miles per hour for rolling terrain, and 50 miles per hour in mountainous and urban areas. The standards provide for control of access, complete elimination of railroad grade crossings and elimination of virtually all other crossings and intersections, as well as other provisions deemed essential for the safe, efficient, and rapid movement of traffic.

"The installation of utility facilities within the rights-of-way of highways constructed to such standards, and particularly the utilization of the main traveled way of such highways as a service road for the installation, maintenance, and repair of utility facilities are inconsistent with the purposes for which such standards were adopted.

"We have given considerable thought to this problem recently, and feel strongly that a policy should be adopted which would preserve the safety features contemplated for the interstate system, and at the same time to make such necessary provisions for the utilities as are not inconsistent with this objective."

The possibility that some change in the reimbursement principle might be submitted to Congress was indicated last spring when the Bureau of Public Roads reported that it was drafting a new memorandum covering reimbursement to public utilities for relocation expenses.

At that time, Clifton W. Enfield, General Counsel of the bureau, said the memorandum would "provide that to the extent a state actually pays for the cost of relocation or adjustment of utility facilities, which payment is not contrary to state law or a contract between the utility and the state or a subdivision of the state, federal funds may reimburse the state for the cost of right-of-way, preliminary engineering, and construction necessary for the utility relocation."

During the first session of the 85th Congress, two bills which not only would end payments of federal-aid highway funds for relocation costs, but would also make the utilities get off the rights-of-way of all federal-aid highways, except for crossings, were introduced by Rep. Robert Jones (D., Ala.). Rep. Jones was a vigorous opponent of the utilities during the several-year Congressional consideration of the subject during debate on the highway bill.—*EDITOR'S NOTE*: *— See Editorial — "Once In Taxes — Again In Rates" — page* 25.

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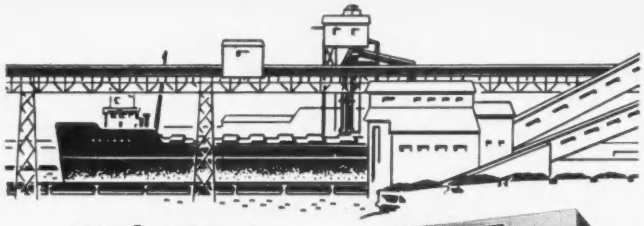

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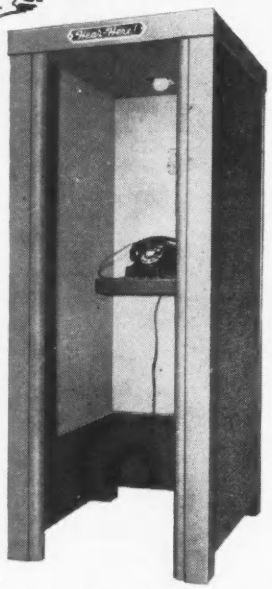

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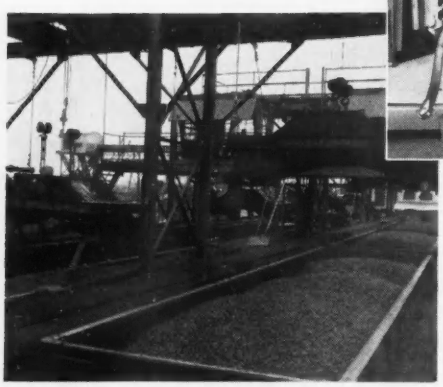

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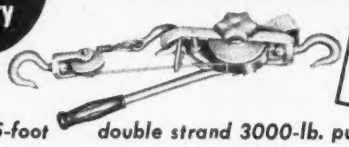

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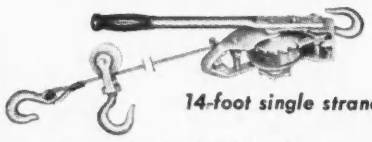

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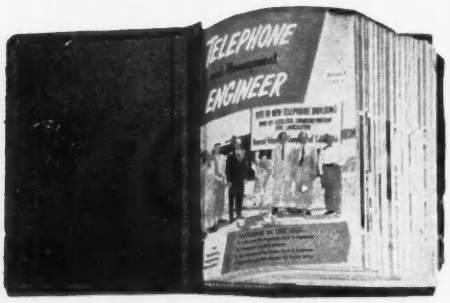

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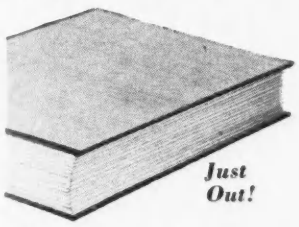

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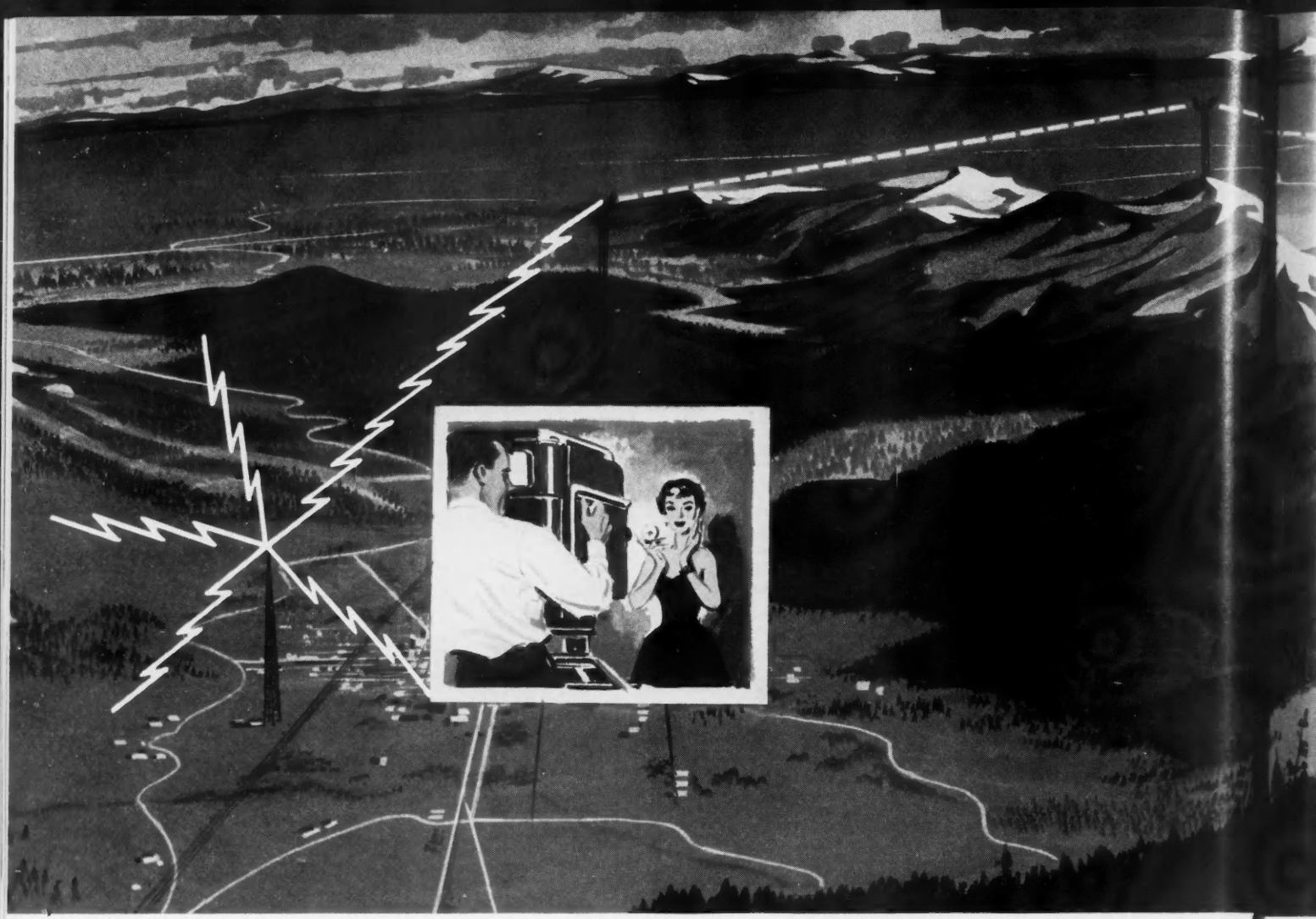

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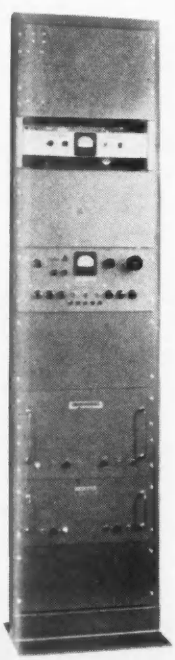

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"Once In Taxes - Again In Rates"

OUR REFERENCE file on happenings in the Nation's Capitol gained in size and importance last month. This two-way growth started on January 8 when Secretary of Commerce Sinclair Weeks, in a prepared statement, told the Senate Public Roads Subcommittee: —

(1) *He opposed reimbursement to utilities for the cost of relocating facilities; and* —

(2) *Congress should give consideration to the problems of "whether and the extent to which utility facilities should be permitted to occupy the rights-of-way of highways on the interstate system."*

The complete story of Secretary Weeks' testimony appears on *pages* 14 *and* 15 of this issue. We believe it deserves careful reading by all industry members and we feel sure study and interpretation of the present Washington activity will prove that unless utilities and their customers get busy and wage a fight at the current session of Congress the relocation cost provision of the Highway Act may end up as a *has-been* and many utilities may find "No Utility Rights-Of-Way" signs along every mile of the interstate highway system!

We include *customers* in our *get-busy suggestion* because the legislation now being planned *will place the burden of utility relocation costs on isolated groups of utility consumers who happen to be in the Federal Aid highway areas.*

The burden cannot be placed elsewhere. Presently, the cost of making needed relocations is borne entirely by utility customers. As these costs increase because of the Highway Program, the utility rates of the more than 27,000 utilities providing water, electricity, gas, sewers, telephone, telegraphs and transportation must be increased to absorb the costs.

And right there an unfair situation develops: The cost increase will have no effect on the quality of the utility service; it will be nothing more or less than an *added cost for improving the highway*; and under such conditions, the *utility customer is bound to pay more than his share of the total cost of the new highways.*

The plain fact that most of us are both taxpayers and utility users does not remove the injustice. On the contrary, the injustice is increased because highway projects are not engineered to divide relocation costs evenly among all utility customers. Those who live in the utility's service area receive no more benefit from the highways than the public as a whole. Funds needed for highway construction are obtained through taxes paid by the general public. Utility users, being members of the general public, pay taxes and thus contribute their fair share of the highway expense. Nothing more should fairly be expected of them. They should not be asked to subsidize the rest of the general public in providing for the common good of improved highways.

We well know industry members realize such facts and are aware of the seriousness of the situation. But how many utility customers know the true facts? In your own service area, how many of your subscribers know Washington is lining up another expense item for them? How many of your subscribers would write their Congressman and protest the pending actions if they are now advised of the true facts?

In the answers to those questions and the activities the answers suggest lies, we believe, a solution to gaining Congressional support of the reimbursement provisions and continued utility occupancy of the highways. The principal parts of that solution include — (1) advising subscribers of the true situation, and (2) urging them to protest to their Congressmen.

Those two steps, when taken promptly, should cause an increase in mail addressed to Washington, D. C. — an increase that is desperately needed if the "Nayes" are to outnumber the "Ayes" when Congress considers just what should be done about utility rights-of-way.

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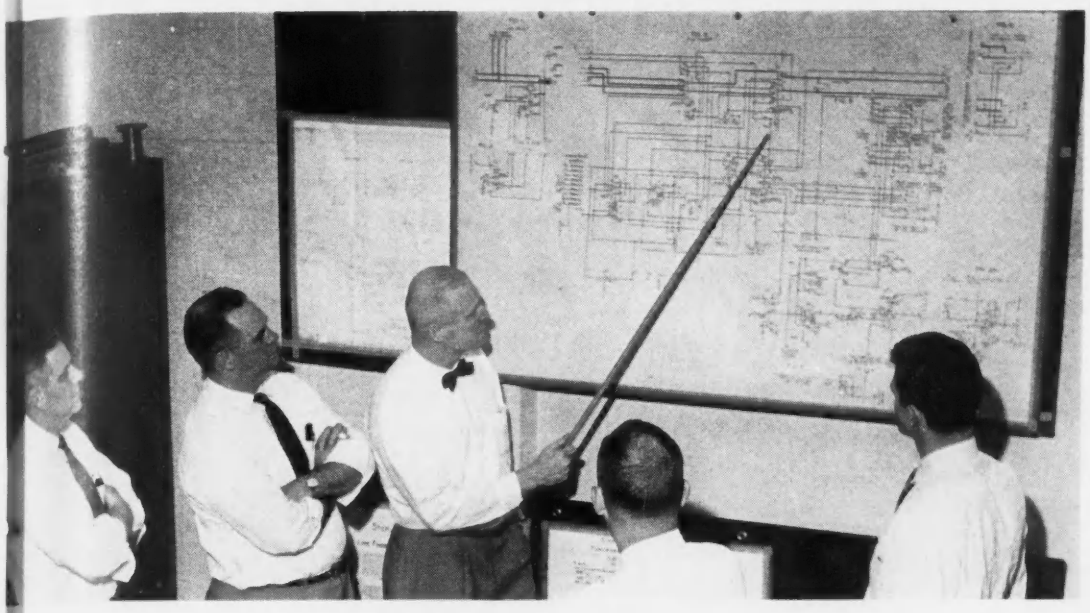

"HAND IN HAND"—ABILITY and KNOWLEDGE

By T. DeWITT TALMAGE*

Part Two of Mr. Talmage's article describes a foreman who possessed the ability to explain involved subjects in a simple manner.

Facts Won't Hurt Anyone

IN EACH individual's lifetime there is encountered at least one incident that he'll *never forget*. One of this writer's unforgettable experiences concerned an uncommonly able line construction foreman. He was one of the last of that breed of "boomer" linemen — with the constitution of a draft horse and a foghorn voice to go with it.

One evening I called at his home and his wife, in response to my request to speak to him, said, "I'm sorry — he's not at home. *This is his night to be at the library.*"

This unexpected answer more than surprised me. It actually startled me. I couldn't imagine this "bull of the woods" sitting down and working in anybody's public library. I have never forgotten how incongruous this situation struck me at the time.

Incongruous or not, this foreman made it pay off handsomely. He believed in preparing himself in advance to be qualified to step into the next job higher on the ladder when it became available. Later, he was promoted to plant superintendent and eventually advanced to manager of the company. While he didn't end up the richest man in the cemetery, still he did own a substantial interest in the telephone company when he passed on to his final reward.

Perhaps this episode in itself will scarcely support fixed and firm conclusions, yet it's safe to say that what this telephone man learned in the library evidently didn't do him a bit of harm.

Failure To Dig In

THIS FOREMAN'S successful philosophy of life, both on and off of the job, was simple and to the point. He often stated that failure to "dig in" a job was a prevalent source of errors. He acknowledged the fact that in addition to technical competence, important as it is, "getting along" with people was also a basic requirement of most jobs.[1] This accounted for no small part of his success — modest as it may seem by today's standards.

He also possessed that scarcest of all knacks, the ability to explain involved subjects in simple terms, in a straightforward way that made his orders easy to

**Educational Manager, Kellogg Switchboard & Supply Co., Chicago, Ill. Part One of this article appeared in the January 1 issue of "Telephone Engineer & Management."*

[1]*Today the National Foreman's Institute says: "It is an accepted fact that a foreman's success depends only one-fourth on his technical skill, and three-fourths on his ability to handle people."*

carry out by the inexperienced workman. He never asked a man in his crew to do something he would not do himself. But his guiding philosophy did not stop there — it went further: he never gave *detailed* instructions to a man about how to do any job that he had no previous experience in performing himself. Stated simply, he believed in knowing what he was talking about.

He not only knew his work but he enjoyed teaching it to others — a trait in itself worth a crown in heaven.

How To Anchor Lines

IT WAS this foreman that furnished the writer with a realistic introduction to the art and science of (1) properly anchoring pole lines, (2) installing dependable, low-resistance ground connections, and (3) performing pole line construction work in a safe manner. He didn't waste words but what he said in his characteristically emphatic way was remembered a long time. It was from him that the writer first heard that classic statement still encountered today among line construction crews: "A line well anchored is half built; a poorly anchored line is never built."

Some of his salient guying and anchoring experiences and know-how were recorded in the Independent telephone trade journals at that time. More recently, industry-wide anchoring practices, encompassing the latest methods and techniques, have been described in an outstandingly clear and usable 25-page instruction manual issued by the A. B. Chance Company. The title of this manual is: "Anchoring for Power and Communication Lines — How to Improve Line Construction with Better Anchoring."

This well-illustrated instruction manual describes how the right anchor can be installed at the right place in the right way — and at the lowest cost. It includes suggestions for use of proper guying fixtures, guy protectors, and guying tools.

Variations in soil characteristics, in loads applied, and terrain make anchoring and guying procedures difficult to standardize. This manual, however, describes the most commonly-encountered anchoring applications and problems and suggests alternatives for unusual conditions.

Most outside plant telephone workers, including "grunts," apprentices, and other learners, as well as experienced line maintenance and construction workers will benefit by getting a copy of this manual and becoming thoroughly familiar with it.

For engineering help in solving special anchoring problems, or a free copy of this practical manual, or both, write to the A. B. Chance Company, Centralia, Missouri.

Sources Of Job Information

DURING THE past two years, 14 of this writer's articles in *Telephone Engineer and Management* have included, in footnotes and bibliographies, references to over 100 sources of publications that enlarge upon certain aspects of subjects summarized in the articles. This additional feature was included as a convenience to conserve the purposeful reader's time in locating pertinent material from many scattered sources.

Many of these useful references are as close to you as your nearest public library. In case your local library does not happen to have the publication you need, oftentimes it can be obtained by your librarian on an "inter-library loan" basis. If the answer has been printed, the technologic librarian can find it. Thus, your library card can truly be a passport to business knowledge, to job knowledge, to knowledge about that most vital part of your life: *your career.*

Photo-Duplication Service

IN THE CASE of some magazine article references, it may be found desirable to use the reasonably-priced photo-duplication service available from certain libraries, such as the nationally-known John Crerar Library. This duplication service is offered in place of loan of hard-to-get publications or manually typed transcriptions. Complete details of this accommodation may be obtained by writing to the John Crerar Library, 86 East Randolph Street, Chicago 1, Illinois.

The Engineering Societies Library

THOSE READERS who wish to "dig in" further into telephone subjects may conceivably require more complete bibliographies than those used in this series of articles. The Engineering Societies Library has prepared bibliographies on subjects of general engineering interest including the fields of civil, electrical, mechanical, mining, metallurgical, and petroleum engineering. This library has 172,000 volumes covering all branches of engineering at the practicing-engineer level. Over 1,400 technical periodicals are currently received from all parts of the world.

A list of available bibliographies will be furnished on request to the Engineering Societies Library, 29 West 30th Street, New York 18, N. Y.

Perhaps this need for the preparation of more comprehensive bibliographies of special interest to the Independent telephone industry is worth investigating by the appropriate committees of the telephone trade association whose aims include this type of beneficial service to its membership.

While extra copies of recent back issues of communication magazines included in the bibliographies can sometimes be purchased from the publishers, generally it is necessary to buy back issues from a company that specializes in furnishing such reference material. The largest company of this kind is the H. W. Wilson Company, 950 University Avenue, New York 52, N. Y. It's pretty hard to stump this company, regardless of how old the magazine is that you request.

Part III of Mr. Talmage's article will appear in the February 15 *issue of TE&M. It will discuss* (1) *the importance of maintaining files of essential reference material;* (2) *the increasingly important problem of becoming acquainted with the work that is just around the corner; and* (3) *how to study.*

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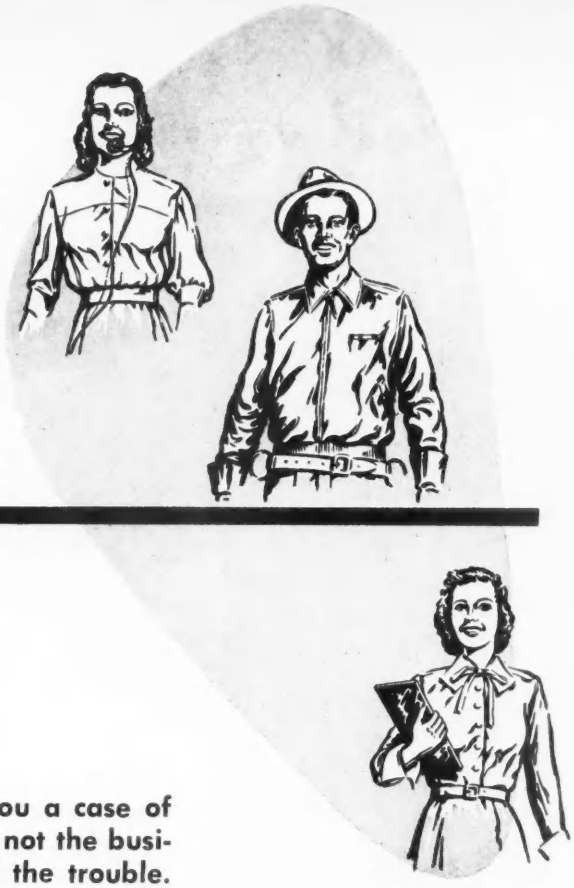
When Business

Gets On Your Nerves



By ERNEST W. FAIR

WHAT'S WRONG when the business gives you a case of "nervous jitters"? In many cases the cause is not the business. Here's how to find the "big cause" of the trouble.

EVEN THE most successful telephone company executive often looks across into space and wonders "*why the heck he got into it.*" At other times he wouldn't trade places with any other business or professional man in the community. With many of us these periods when the telephone business gets on our nerves can occur with great frequency. Even where they occur only now and then it's time we did something about it.

One way is to just quit and get into some other line of business but few of us really want to take this step. And chances are, the new field of endeavor would get on our nerves also.

The truth of the matter is, the telephone business or our own company are not responsible for the situation. Usually it concerns each of us as an individual and the cure lies in discovering what is wrong and doing something about it.

"*Find the big cause of the trouble,*" is the advice frequently given by the experts. They point out that in an average telephone company there is usually one single thing causing the irritation. Both doctors and business counsellors point out that the wisest step is to look for the cause of irritation.

In many instances the executive will not have to look for the big trouble maker. He knows good and well what it is all about. It's a problem he hasn't been able to whip in the past and can see no probability of whipping in the future. In such a situation, unless he does something about it, the problem is going to damage much more than his nervous system.

What can he do about it? We've asked a number of executives with whom we've talked during the past year how they went about solving the problem. Their combined suggestions boil down to these: —

(A) *Quit trying to solve the problem yourself. Go to someone who has the ability to solve it and get the load off your mind.* The chances are that only sheer blind luck is going to solve it for you if you don't for you've been trying for a long time to do the job alone. Give it up and call in someone for help.

(B) *Take a week off and hop into your car. Travel over your immediate area and talk to other telephone company executives.* Without a doubt you'll find several who were confronted with the same problem and found a satisfactory solution. Maybe it will take a little tailoring to fit your specific job but that should be easy.

(C) *Call your staff together and go over it with them.* You'll be surprised how another viewpoint on the problem will either bring up a solution or start you thinking along the right track.

A second step in soothing those jangled business nerves is to take a real close look at your own health. Fortunately the writer has numbered a great many doctors among his friends in the past and we've had many discussions on business men and their health problems. One such comment fits this situation to the point:

"Whenever I have a business man come to me with the complaint that his business is getting on his nerves,

that everything seems to go wrong, and that he feels maybe I can help him," one doctor told us, "he is bringing the solution right in with his own words.

"I'm sure at least half the men who suffer from business nerves have nothing to blame but their own health and physical condition. Usually, they're suffering a gradual health deterioration that is so slow it never becomes noticeable until a breaking point comes along. Usually it manifests itself in the form of business nerves. When that happens it's not hard to get back on the right track. A check-up with the family doctor will reveal just what's wrong with the business man rather than the business."

All of the routine details of the telephone company job, which never bothered a person before, can under conditions of sub-par health irritate any man's nerves to the point where he wishes he had started his business life in some other field. The step to take is to remedy the health mal-functions and get back the alertness, interest and pep we once had.

"Get A Sideline"

THIS BRINGS up another point. We know one company executive in a top spot who one morning asked us if we knew of some other interesting field of business he could get into. In answer to our astonished queries he explained he was fed up with the telephone business and it no longer held any interest for him.

Success can do that with many of us. Our real interest and pleasures comes in building to the big spot rather than in handling the job once we have attained the goal. When the high rung on the ladder is reached our "fire" dies down and the things which used to be interesting challenges to us become dull and uninteresting.

Our friend solved his problem by launching and building a sideline business and today he is having more fun out of life, making more money than he needs, and is so sold on the telephone business he will never admit he once thought of leaving it.

"Change The Scenery"

GETTING away from the job for a short period of time is another good way of handling the nerve problem. Too few telephone company executives take two or three vacations a year from their jobs and many even forego a single vacation. Staying with a job day-in and day-out, month after month, is a sure way of building up a case of nerves to the point where we will actually hate the whole business.

Every individual needs rest and relaxation from his job problems. He simply cannot maintain his alertness, interest, or calm nerves with his nose to the grindstone. That was once a business credo but in those days business was primarily routine founded on a basic set of principles. It isn't any longer — today's problems are supplanted by new ones tomorrow — the pace is much rougher. And the rougher the pace the more damage it does to the executive's nerves.

We've noticed the executives who have never been troubled by business nerves are nearly always the men who manage to take a week off at least twice a year and a week-end away from the business whenever the opportunity presents itself.

It's also a good idea to cut down on the full-time daily job. The telephone business encompasses a lot of hours out of every day of the week. It is a hard task mistress who gives us little time for anything else if we keep ourselves tied to her apron strings.

Getting out of the office every day and doing nothing more than calling on other business men helps to keep the anti-business nerves from rising up. Constant and close contact with the same conditions can jangle the nerves of the calmest man.

Relaxing with outside interests also helps restore the proper perspective. Have you noticed that the business men who play a round or two of golf a week, bowl, or have some other recreation of particular interest to them, are men who never complain about the business getting on their nerves?

There are sports and similar outside interests for all of us no matter how or where our tastes may lie, no matter how rich or poor we may be or how young or old we may be. And there isn't a telephone company going today, large or small, that won't keep right on doing business if the individual executive leaves it for an hour now and then.

"Safety Valves"

IT'S ALSO GOOD procedure, many successful business men have told us, to develop a set of safety valves. Many times the irritation which we may think has been caused by some phase of the business is really incited by something else in our lives. If we learn to develop safety valves for release of such emotions the business will appear much more attractive to us.

That takes a lot of self-training and doesn't come easy. Never permitting a distasteful situation in our lives to stay with us for more than a few moments after it has occured is one safety valve. Carrying these irritations around ruins the perspective we have toward everything else.

Control of temper, development of tolerance, forcing ourselves to stop activity and relax regularly and similar steps all fall into the safety valve category. It's just as important that we have one of these on our own "personal machine" as to have a safety valve on a boiler. Both are there for the same purpose — to blow off that extra head of steam.

There's nothing wrong with the telephone business today — in fact it's far more interesting, more profitable and more fun to be in than it was ever before. When it gets on our nerves we can be sure it's not the telephone business but ourselves causing the irritation — and right then and there is the time to re-check the foregoing suggestions and apply them to keep from ruining the perspective that has helped us climb the ladder in one of the finest fields of business in the land today!—*Ernest W. Fair.*

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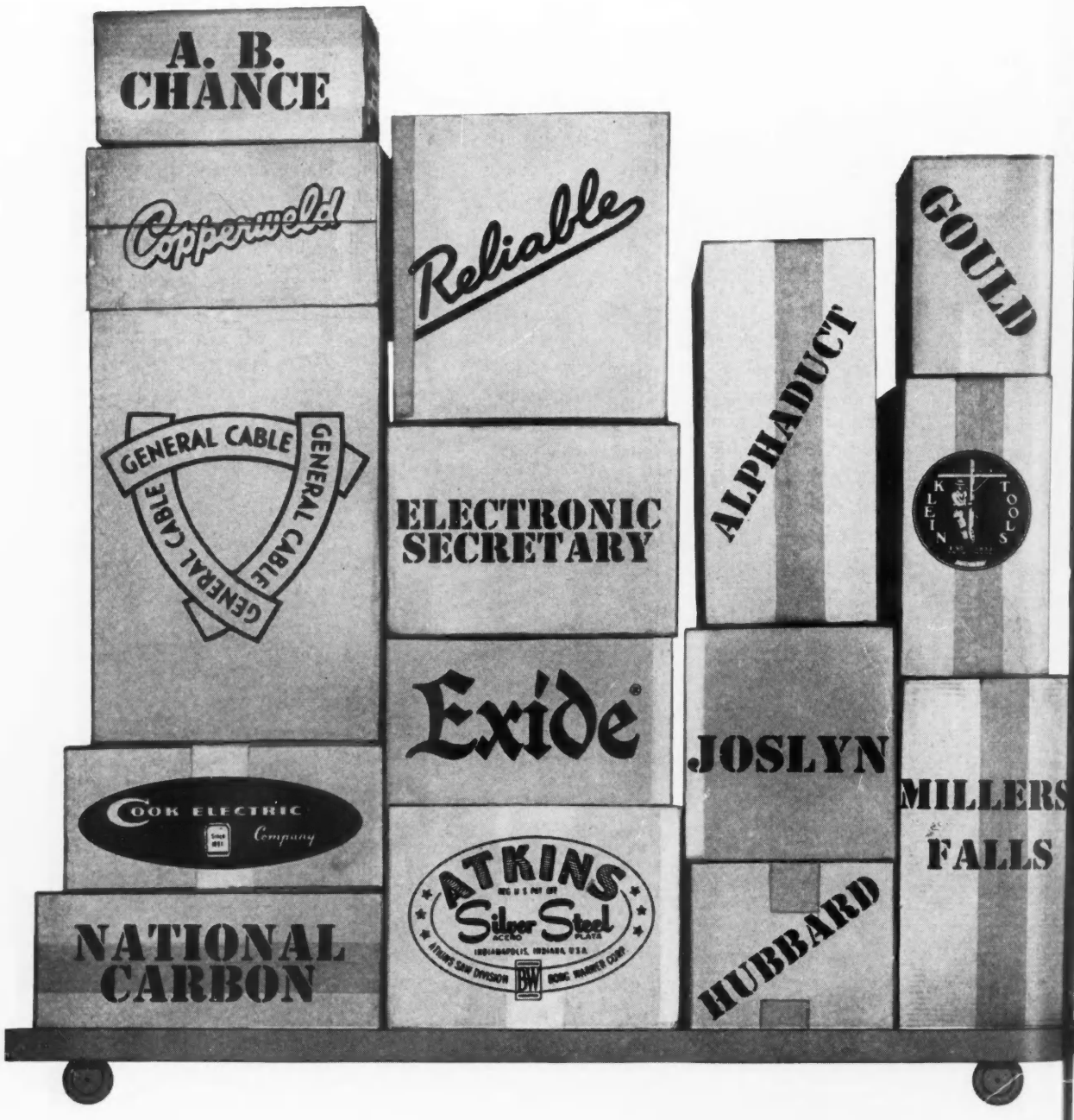

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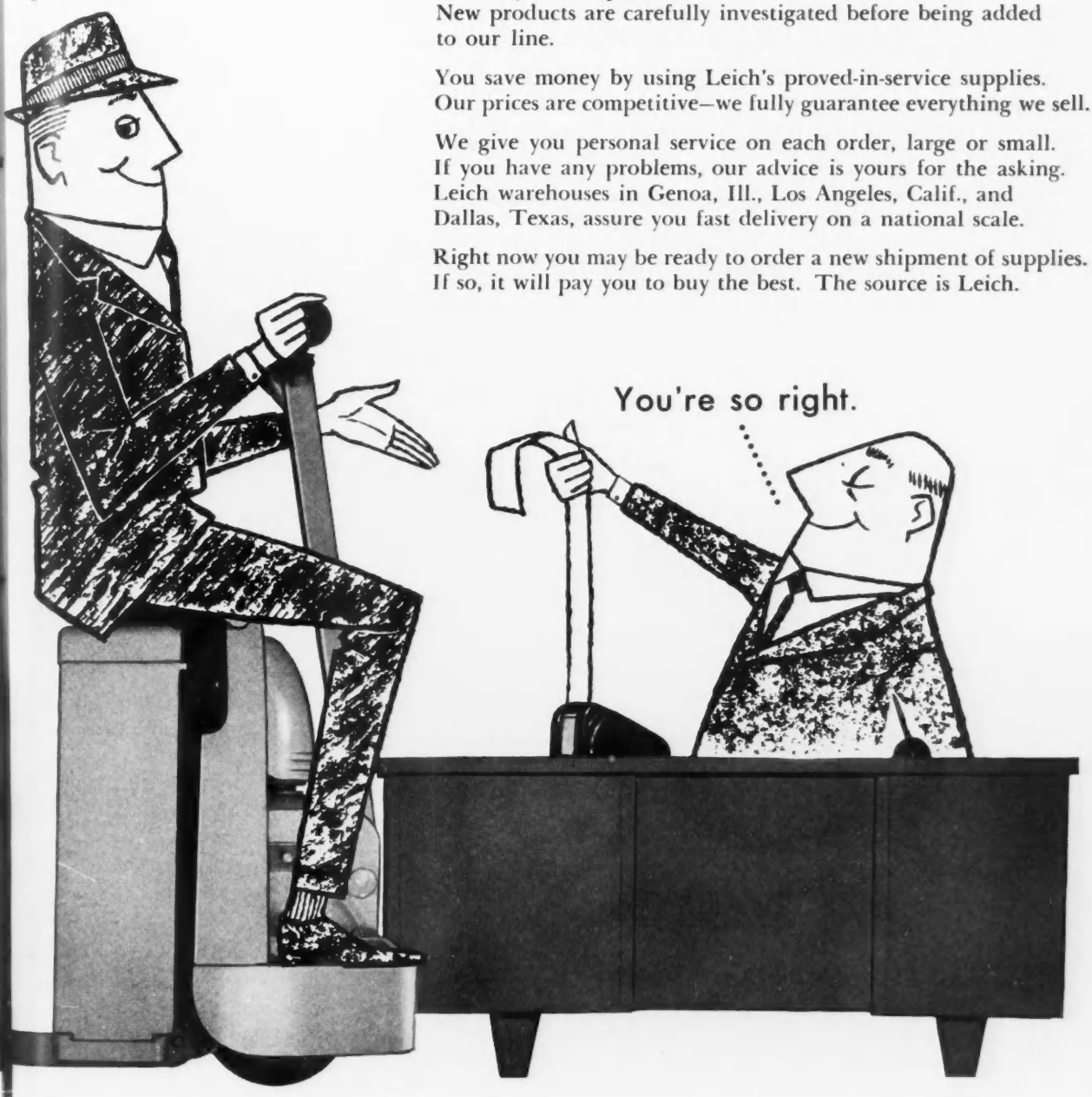

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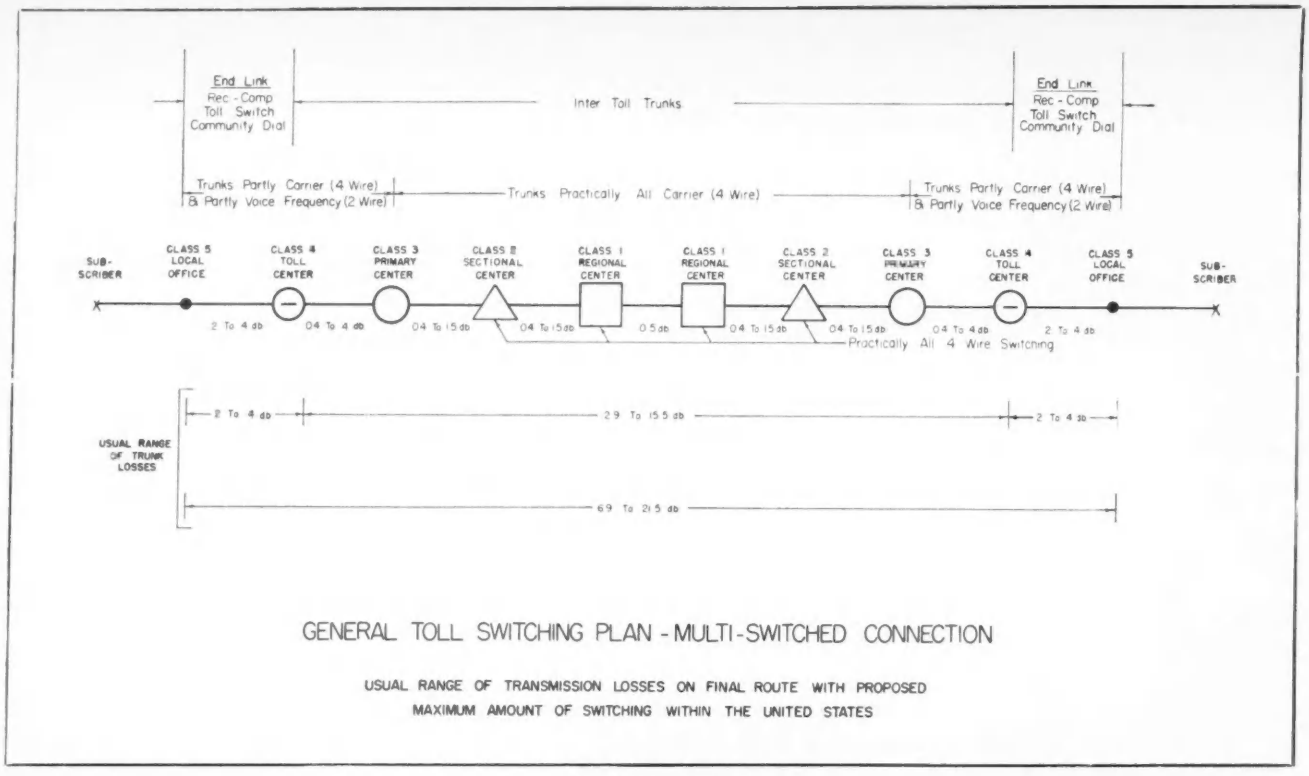
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CLASS 4 TOLL CENTER
CLASS 3 PRIMARY CENTER
CLASS 2 SECTIONAL CENTER
CLASS 1 REGIONAL CENTER
CLASS 1 REGIONAL CENTER
CLASS 2 SECTIONAL CENTER
CLASS 3 PRIMARY CENTER
CLASS 4 TOLL CENTER
CLASS 5 LOCAL OFFICE
SUB-SCRIBER
.2 To .4 db
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.2 To .4 db
6.9 To 21.5 db
GENERAL TOLL SWITCHING PLAN - MULTI-SWITCHED CONNECTION
USUAL RANGE OF TRANSMISSION LOSSES ON FINAL ROUTE WITH PROPOSED MAXIMUM AMOUNT OF SWITCHING WITHIN THE UNITED STATES

CHART ONE.

TRANSMISSION: OUR PRINCIPAL PRODUCT

By J. B. SPRATLEY*

PART TWO of Mr. Spratley's article discusses: — (1) the fundamental basis for the "Via Net Loss" plan for switching; (2) impedance control; and (3) effect of carrier on the general toll switching plan.

General Toll Switching Plan — "Via Net Loss"

YOU WILL note that the end links connecting the subscriber's local office to the toll center have a higher minimum loss than the others — always over 2 db but should not exceed 3 to 4 db. Here we get at the fundamental basis for the "Via Net Loss" plan for switching which is simply this:

On account of echo and singing margin considerations, trunks when used between toll offices can operate satisfactorily at about 4 db less than the same facilities on terminal connections. Also two or more trunks in tandem can operate satisfactorily between toll offices at about 4 db less loss than the same facilities on a terminal connection. This means that if we operate all of our trunk circuits at a loss suitable for terminal use, each and every trunk would have a loss of more than 4 db and we would have prohibitive transmission loss in multi-switched built-up connections. To get around this, we do several things:

First, we take the overall "Via Net" losses determined from "Via Net Loss" factors which we mentioned earlier and add 4 db to it to provide echo and singing margins.

Second, we put 4 db in the end links, (2 db at each end) as shown on Chart I, operating the end links at 2 db more than the minimum net loss for "Via" operation. As mentioned earlier, minimum net loss for "Via" operation can be ascertained by using the "Via Net Loss" factors listed in the current Blue Book.

Third, since the operating procedures require all of the intertoll circuits to be used for "Via" connections only and never for terminal business, we are now in a position to operate them at the minimum loss suitable for "Via" use, that is, at

**Mr. Spratley presented this paper at the 1957 convention of the Virginia Independent Tel. Assoc.*

the minimum loss determined by means of the "Via Net Loss" factors.

There are a large number of instances where a toll switching center and a local switching center are in the same building, and it is necessary to insert the 2 db loss between these two centers in order to meet our echo and singing margins. This is done by adding 2 db loss pads to the central office trunk relay circuits. (The "Via Net Loss" is zero for the intra-office cabling involved).

The ingenious method of adding the pad is described in Section VI of the Blue Book and we won't take the time to describe it here. The ingenuity consists of locating the pad so that the subscriber loop limit of the central office equipment will not be reduced. If outside plant cable pairs or open wire or carrier connect the toll switching center to the local office, there is usually as much as 2 db loss in these facilities which makes it unnecessary to add the 2 db loss in the central office equipment. We use the loss in the trunk facilities to furnish the 2 db margin that we need.

Let's consider an example. In the Tidewater Company's area I understand that the Warsaw toll office will be Class 4 and therefore each of the trunk relay equipments from this toll office to the Class 5 local dial office in the same building must include 2 db loss pads. Trunks from the Warsaw toll office to Class 5 community dial offices, such as that at Montross, will include a minimum of 2 db loss in the toll line or carrier facilities, and loss pads will not be required in the central office.

Frequently, Class 5 local offices have their toll outlet in Class 1, 2, or 3 offices instead of in Class 4 offices. In cases of this kind, the same design of the end link is followed (2 db + VNL). There are numerous instances of this which could be mentioned such as the Class 5 local offices at Troutville and Fincastle which have end link trunks to the Class 3 toll switching center at Roanoke and the Class 5 local offices at Dawn and Gum Tree which have end link trunks to the Class 2 toll switching center at Richmond.

In order for the overall transmission to be satisfactory, each part of a built-up connection should contribute only its fair share of the overall transmission loss, along with a proper amount of echo and singing margin. If the losses on intertoll trunks and end links used in built-up connections are permitted to go downward from their proper values (that is VNL or VNL +2), the connections are likely to be submarginal due to excessive echoes, hollowness or singing. If the losses should drift upward there is likely to be excessive overall transmission loss.

General Toll Switching Plan — Impedance Control

AS IN THE case of a lot of the good things in life there is a catch to the "Via Net Loss" plan. There are a few things we have to do and watch out for when placing an office on the "Via Net Loss" basis

Technically, life would be much simpler in the telephone business if we could put in trolley wire to take care of our services but the trouble is we can't afford it. Instead, we use wire of much finer gauge along with electronic equipment and, in order to do so, it is necessary that we be much more careful than formerly in installing and maintaining an electrically smooth plant. We have to do this because we can't argue with physics and our electronic equipment insists upon it.

When adding electronic gear to loaded cable facilities for the first time we are sometimes surprised to find an unstable condition and the reason may be a load coil or so missing or misplaced thereby causing a substantial impedance irregularity. Before the application of electronic equipment, irregularities sometimes escape detection. The electronic equipment will frequently tell us of a trouble even though we could not detect its presence by merely talking over the facility.

Not only is it necessary to provide toll line facilities that are electrically smooth but the impedance irregularities within our toll offices may also be reduced to a point where satisfactory transmission can be provided. We have not heretofore given much attention to the reduction of office impedance irregularities except in the large switching centers, but under the "Via Net Loss" plan, they must be investigated in smaller centers. Steps which can be taken in central offices for this purpose consist of providing arrangements so that any two trunks can be switched together without serious impedance irregularities.

The whole matter of elimination and reduction of impedance irregularities to a proper degree has been termed "Impedance Control." Several of the arrangements used for controlling impedance are:

(a) Using proper ratio of repeating coil (or transformer) to convert impedance of trunk facility to a common office impedance, the latter usually being 600 or 900 ohms at 1,000 cycles. We have been using transformers in this way for a long time. Practically all local switching offices that is, Class 5 centers have an office impedance of 900 ohms and nearly all other switching centers have an office impedance of 600 ohms.

(b) Impedance compensators for correcting the high frequency impedance of certain types of toll connecting plant, such as H88 high capacity, H135, H175, and B135 loading systems. It is necessary to adjust the multi-unit condensers on each compensator to attain the required improvement in impedance characteristic.

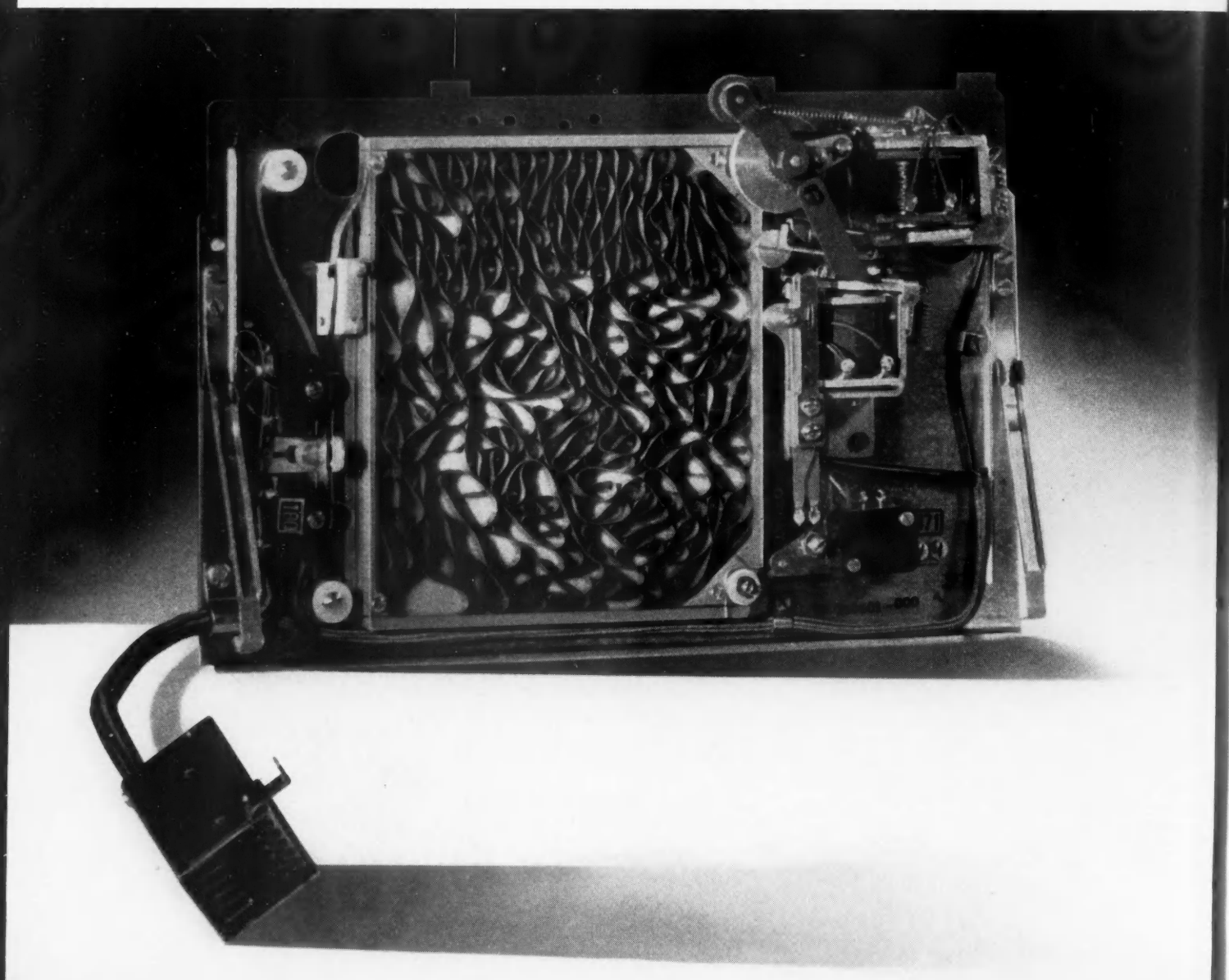
(c) Selection and installation of outside plant and central office equipment so as to avoid impedance irregularities that will be troublesome; also the provision of idle circuit terminations in the central office relay circuits when needed.

(d) Adjustment of multi-unit capacitors in toll switching centers to correct for unequal lengths of central office cabling. The variations in office cabling if not corrected can at times cause a surprising amount of impedance irregularity and detrimental effect on transmission.

Some of the above measures are applicable to all classes of switching centers (Classes 1, 2, 3, 4, and 5)

Please turn to page 38

● READY...With XY® Toll Ticketing you can enjoy profitable toll revenue today -- and you'll be ready for nationwide toll dialing tomorrow. Stromberg-Carlson equipment is completely compatible; its routing and rating facilities are flexible enough to meet the requirements of any national toll dialing system. XY



Toll Ticketing watches traffic automatically, clears recorders on schedule, records data on electric typewriter or cardpunching machine. New "plug-in" printed circuitry means easy maintenance, extra reliability, increased space economy and added flexibility.

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ELECTRONIC AND COMMUNICATION PRODUCTS FOR HOME, INDUSTRY AND DEFENSE

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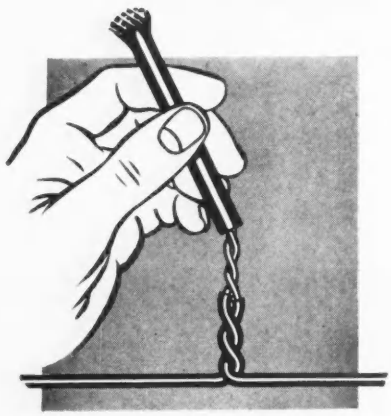

"Super-Splice" makes splices waterproof . . . from inside out!

Sealed at one end, this plastic splice sleeve is filled with an insulating and waterproofing compound.*

Economical "Super-Splice," a Superior exclusive, makes the splice permanently as good as the cable . . . yet it can be re-entered easily. The compound never hardens or oozes out no matter what the temperature.

Prevent leakage currents and breakdowns in the presence of moisture...good for 25,000 v.d.c. Order "Super-Splice" NOW!

*A Dow-Corning silicone compound.

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"Super-Splice" is available for use with straight, butt or bridge splices.

For further information on economical "SUPER-SPLICE", write

SUPERIOR CABLE

SUPERIOR CABLE CORPORATION
Hickory, North Carolina

and others to only some of these classifications.

Effect of Carrier on General Toll Switching Plan

TO COME BACK to our earlier statements concerning the beneficial effect of carrier in improving transmission, *Chart 1* is revealing in that it shows that practically all long haul trunks are now on a carrier basis and practically all of the Class 1 and 2 centers are switching on a 4-wire basis.

This means that almost all of the long haul backbone switching is on a 4-wire basis and this is of tremendous help in controlling echoes and singing. As more and more carrier is installed for the trunks on the outer ends of the toll connections near the subscribers, we shall in time reach the point where the major source of irregularity remaining will be within the Class 3 and 4 switching centers since practically all of these switch on a two-wire basis.

In these Class 3 and 4 centers, unbalances can be reduced to a point where they will not be troublesome as mentioned earlier. Measures for balancing in Class 3 offices are more expensive and difficult than in Class 4 offices and the moral to this is: don't get into Class 3 switching if you can readily avoid it.

This matter of impedance control is something all of us have been doing for years on a somewhat smaller scale. The General Toll Switching Plan requires that we do more of it but it is not anything we should be afraid of. Ordinarily, it is not a major task to meet the requirements in Class 4 offices and perhaps little is needed in Class 5 offices.

We have the tools to accomplish what is needed to place the General Toll Switching Plan in operation and a lot of progress is being made to that end. I believe I am safe in saying that, technically, there is no excuse for poor transmission on services offered under our tariffs because facilities are obtainable which will eliminate unsatisfactory conditions. The new tools previously mentioned are making it easier and cheaper to meet our tariff responsibilities.

Recapitulation

WE HAVE touched on some of the high spots of our present toll transmission design. Obviously in a brief review like this, it has been necessary to skip over or touch only lightly and generally on many aspects of the overall transmission job. In closing let's enumerate some of the items we have mentioned:

(1) Transmission is our principal product and is a primary interest of all telephone companies.

(2) Transmission is world-wide in scope.

(3) Marvelous new tools are available for providing satisfactory transmission but these tools have limitations which must be recognized and catered to.

(4) Suitable types of carrier are bargains because we get so much for our money. They make it easier to attain the objectives of the General Toll Switching Plan.

(5) "Via Net Loss" operation is a method of toll switching which makes maximum use of the built-in gain of our electronic gear.

(6) In order to make use of the gain of electronic gear and in particular to handle our toll switching on a "Via Net Loss" basis, it is essential that we take steps to control echoes and to insure an electrically smooth plant, reasonably free from serious impedance irregularities, both in our toll facilities and in our toll switching centers.

Finally, good transmission is not a luxury — it is a necessity — and requires teamwork among all the members of the telephone industry in Virginia. The failure of any member to meet the transmission objectives affects the service on calls to and from all other companies. We have gone a long way towards improving transmission in recent years and we must continue to improve in order to keep up with the continuing public demand for better service. Surveys which have been made indicate that our customers are no better satisfied with the transmission being furnished today than they were with the somewhat poorer transmission of 10 years ago.—*J. B. Spratley.*

Plant Notes

On New Developments

By JOHN S. REED

Kansas construction company reports use of "Backhoe and Loader" speeds digging and back filling job . . . Effect of color on telephone usage tested at the Waldorf-Astoria. Color sets boosted usage 50 percent.

"Backhoe & Loader" Speeds Digging & Back Filling Job

"TEN MINUTES average time per splicing pit on a 185-mile telephone line contract job reaching from Hutchinson to Garden City, Kans.," is the achievement reported by B & Z Construction Co., Hutchinson, Kans. telephone line contractors, which used a Davis Backhoe and Loader combination on an International 300 Tractor for digging and back filling on the large-scale job.

"On this and other contract jobs in the past 13 months we've logged over 5,000 hours of work time on our Davis Backhoe and Loader with no down time for repairs and maintenance," said R. L. Blackman, a partner with Virgil Zolman in the contracting firm.

"The 185-mile job was the largest we've had, but we generally have several smaller jobs going simultaneously," he explained. "Actually about 90 percent of our work time is spent on telephone line jobs of one kind or another."

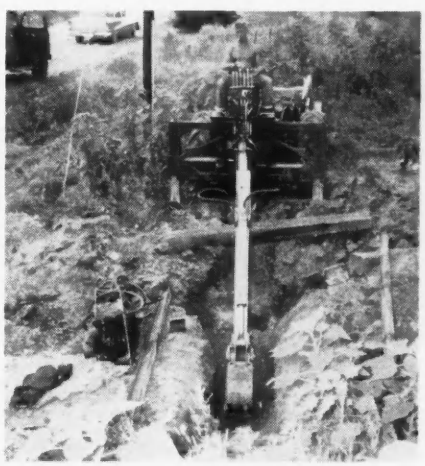
Clio Leakey, supervisor for the concern, said the Hutchinson to Garden City job involved digging in all types of soil and rock conditions.

"In many cases we encountered soil so impacted that we had to use hard rock augers," he said, "but even there the Davis — with its 7,000 pounds of breakaway power and its teeth that rip the hardness away until you get a 'purchase' — handled the pits with no trouble."

Leakey said Davis was used on digging splice pits and load joints for the entire job — and there were approximately six splice pits to the mile along the entire 185-mile length of the line.

The splicing pits, although varying widely in exact dimensions, are dug seven feet long, approximately four feet wide and three feet deep. They ordinarily go about a half foot deeper than the cable trench.

Bill Banker, who operates the Davis for the B & Z concern, said many of the splicing pits were dug in frozen ground last winter in sub zero weather.



The backhoe and loader used on Kansas construction job handled digging in all types of soil and rock conditions. The unit was used for digging splice pits and load joints for the entire 185-mile job.

"Using this machine it was not necessary for us to do any hand digging or cleaning," he said. "It cleaned the pits well and the wide operating range made it possible to pile the dirt far enough from the working area to prevent 'fall off.'

"We also appreciated the fact of being able to 'see where we were working.' This was important on the pits — and also on some of our repair jobs, when we have to dig a trench alongside a buried cable. The visibility feature makes it possible for us to dig down to expose a damaged cable without cutting into it.

"Another feature we like is the vertical stabilizers which level the machine and ease the problem of 'hillside digging'," said Banker.

The entire cable line from Hutchinson to Garden City — installed — cost $5,000,000.

During the record-breaking blizzard of 1956 the buried cable between Hutchinson and Garden City was the only telephone contact between the western and eastern ends of the state. All surface lines were down.

Telephones in Color Stimulate Sales and Usage

ONE phenomenon of these times that has astonished even old timers in the telephone business is

NOW BEING COMPILED . . .
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Telephone Engineer's

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Circulation 12,704 Over 6,000 MORE than any other telephone directory

FROM THE NEWSPAPERS — "General Telephone System will spend $1 billion in the next five years" — "Bell System just voted financing of $720 millions (largest in U. S. history) to meet the demands for new telephone facilities" — — Add to these multiple millions to be spent by the surging telephone industry the requirements of some 4,500 Independently owned telephone companies and thoughts of a recession for manufacturers serving this industry seem quite remote.

MANUFACTURERS AND SUPPLIERS wishing to have an effective salesman on the desks or at the finger tips of the people who buy or specify telephone equipment, supplies or services in practically every telephone company in the nation will be using the advertising pages in TELEPHONE ENGINEER'S 1958 CATALOG-DIRECTORY of Industry Suppliers. Write for circulation breakdown and advertising rates today!

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the additional sales and greater telephone usage that have resulted from color in telephone instruments. Americans have taken to color in practically everything, wearing apparel, appliances, automobiles, and home furnishings and fixtures. As the result of extensive market studies, telephone set manufacturers are now producing instruments in a variety of lovely shades intended to appeal to the feminine taste. Even pay telephones are available in color.

The eye catching ability of color telephones even in commercial establishments is illustrated by the results of experiments reported in the *Ohio Bell Magazine*.

The Waldorf-Astoria, a famous hostelry, assigned a floor to test the effect of color on telephone usage. It kept that floor filled with patrons for one month prior to the installation of colored instruments and kept an accurate check on the number of local calls placed by patrons in this location. In the following month, color sets were installed and the same record was kept. Usage skyrocketed fifty percent!

A similar experiment was made at a medium sized hotel, the Sheraton Kimball in Springfield, Mass. Usage increased almost 17 percent. Since it is the practice of hotels to charge for local calls, it was estimated that the hotel could pay off the non-recurring color set installation charge in 14 months if the entire hotel were converted to colored instruments.

Color telephones cost more because of higher manufacturing costs resulting from the use of special molding apparatus and the great care required to avoid contamination of the set housings and handpieces by other colors. Since the plastic material may become discolored in service, sets returned to the storeroom in station changes or removes are cleaned and buffed in the shop.

Those sets that still have an unsatisfactory appearance after this treatment are sprayed with pigmented acrylic lacquers of the same color. The acrylic lacquers resist staining and discoloration and the spraying process produces a finish comparable to that of a new set.

Now, color conscious subscribers can be kept happy when you use WB Plastic Jacketed Beige Station Wire. A clear soft beige, harmonious in any surroundings, satisfies the most particular housewife.

WB Jacketed Station Wire is designed for fast, economical installation with stapling guns. Available in two, three and four parallel soft copper conductors. Conductors are insulated and color coded with free-stripping polyethylene and jacketed with PLASTITE in beige, brown or ivory.

WB

INDEPENDENT

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WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT

Questions and ANSWERS

Conducted by Jay G. Mitchell

In this issue Mr. Mitchell helps a group of telephone company employes solve a tricky problem of destructive relay and key contact arcing.

Destructive Relay and Key Contact Arcing

QUESTION: — Several of us who are employed by the local telephone company have been making use of some of our spare time in working out better solutions for some of the problems that we encounter in connection with the daily duties or in fields closely akin to our work in the field of supplying acceptable telephone service in our community. Using equipment available from various sources and our limited technical experience we have now encountered one problem which you can possibly assist us in solving.

The problem appears to be very simple but no one in our group has yet to come forth with the effective answer.

In the experimental equipment there is one relay: we have been working with one wound to 500 ohms, which is assigned the duty of closing a circuit for the succeeding step in the sequence of partial completions of the final objective. This relay is one of a conventional type and its operation is depended upon to switch one wire from one circuit to another, what we have been accustomed to designate as a "make and break" operation.

We find that this relay operates its contacts satisfactorily for a time after they have been cleaned and polished but that the break contact, and to some lesser degree, the make contact, soon become erratic in function and because they cannot be depended upon the entire operating result is unreliable.

We think that our trouble is chargeable to this relay because when we operate these relay contact springs *by hand* the equipment appears to function properly. Any comments that you wish to offer will be gratefully received and studied and may enable us to overcome the present difficulty so that we can proceed to eliminate some of the other possible defects in the experimental set up. Thank you very much.

ANSWER: — In making any suggestion as to the possible remedies that are available to this group it will be assumed that the use of a relay wound to 500 ohms resistance is correct and that the preceeding operation of the entire equipment is satisfactory and in proper order until the 500 ohm relay is *operated and its contact springs apparently moved from their back contact to a firm pressure on the front contact* but that the next succeeding step in the operation of the equipment does not always follow.

It will also be assumed that the relay armature is mechanically free, *at all times*, to move the contact springs whenever the relay is energized by the passage of the normal operating current through the winding. In other words it is necessary to start with the assumption that contact making springs (whether relay operated or key operated) have been positively moved but that at times the energizing circuit that should follow is not completed because of *defects* in the relay or key contacts. This is the condition described in the inquiry for which a suggested remedy is requested.

Consideration of this inquiry must be premised on the understanding that the deterioration of relay circuit controlling contacts (and also key operated circuit controlling contacts) in all types of communication equipment, and in many other applications also; occurs to the small terminal points which interrupt or complete or both interrupt and complete electrical circuits.

Such interruption and completion of electrical circuits will always result in the appearance of an electrical spark at the point where the circuit is interrupted or is established. The creation of such a spark cannot, of course, be entirely eliminated. The design of the other elements of the equipment can, within limits, in most cases be so arranged as to minimize the creation of a destructive spark. When this has been done it will be true in most cases that the entire equipment will operate at increased efficiency.

Of course experimental assemblies cannot always be accorded the intensive study of all equipment features such, for instance, as possible reduction in current drain by the adoption of the most desirable, from all standpoints, winding data. After the preliminary design features have been selected it is always best to make a careful check of all current requirements and then to reduce the current drain in all components possible. In fact this step in the evolution of the final design, which must be carried out, will almost always disclose elements of the complete equipment which can be easily modified to reduce their current drain. The advantage

of such a study, in reducing individual current drains, will have a direct but important effect in prolonging the life and permanency of all relay and key circuit controlling contacts.

In any relay or key contact which controls the starting and interrupting of the current in a subsidiary relay or lamp loop, for instance, a spark will be seen at the controlling contact points for any loop that is controlled by the contact. This is, of course, most noticeable in loops containing *inductive components* but there is *probably no instance* of the making or breaking of current flow by the operation of a relay or key in which sparking is not present. Sparking at such contacts is bound to be more or less objectionable and, if possible, should be minimized.

It has been assumed that this inquiry was related to experiments carried on by the use of conventional communication equipment (relays and keys manufactured by reputable manufacturers of telephone and electronic equipment) and for that reason the *shape* and *material* of which relay and key spring contacts are made will not be discussed unless another specific inquiry on those qualities of satisfactory equipment is received. Any relay or key contacts must be kept clean, smooth, and properly aligned as well as securely attached to their associated contact springs.

Since the reduction of the damage done to relay contacts by the unavoidable spark that must always be created at the terminals of any electrical circuit when the circuit is opened or closed, *and cannot be entirely eliminated*, the following brief comments are submitted to this group with the hope that they may lead to the elimination of their reported design difficulty.

The bridging of a suitable capacitor around the relay make or break spring contacts is the conventional and old time method of reducing spark damage created when the circuits are opened or closed (as the case may be). This expedient is effective in accomplishing an apparent reduction of the intensity of the spark when the capacitor is of the proper electrical characteristics but it is open to disadvantages in many cases. When a capacitor is used for this purpose two effects are created in the associated circuits that are very likely to be troublesome.

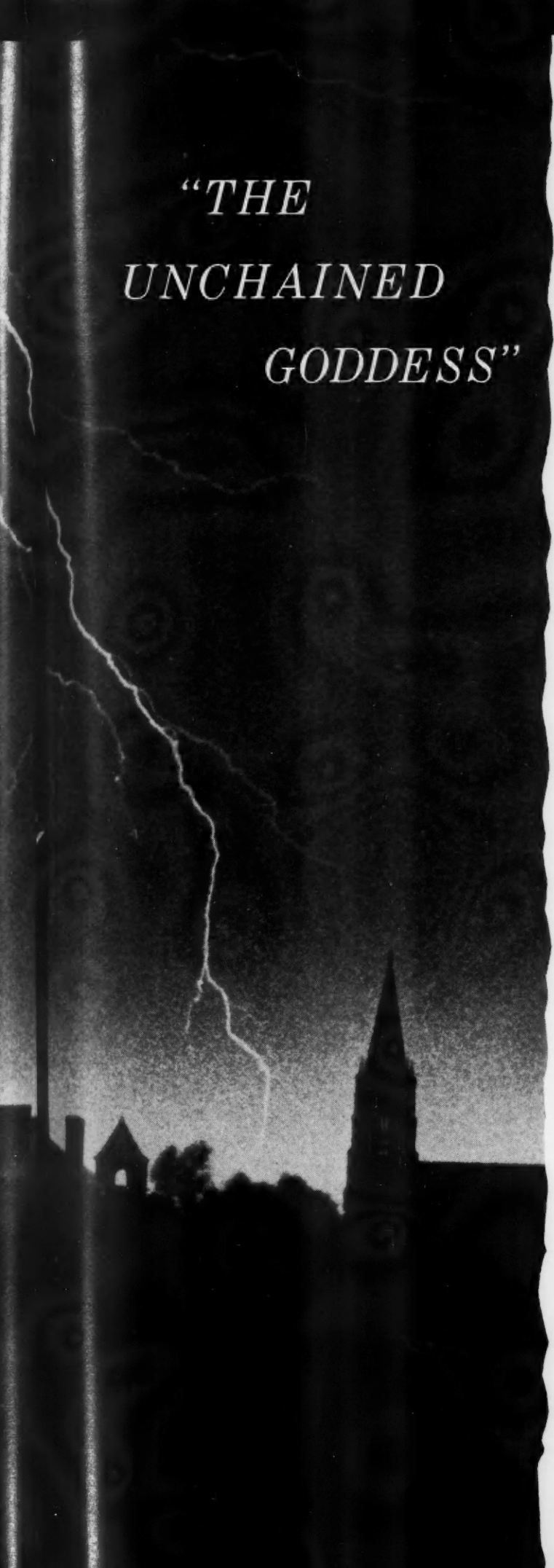
Without attempting to set out a rule that might be applicable in full in all cases it is well to make the following assumptions. The spark at the relay or key spring contacts is probably due to a radio frequency oscillatory current which may have the effect of continuing in the circuit and retarding the condition *desired in the subsidiary circuit* to follow the opening or closing of its energizing circuit spring contact.

Since any electric arc, such as a spark at the local contacts of a relay, must pass from one spring to another through the intervening space; the inclusion of the entire relay in hermetically sealed containers in an atmosphere of some gas which does not readily support the electric arc may be effective in partially quenching the spark that would, in air, be more objectionable.

Another method that has been offered to the electronic industry is the connection of minute rectifiers in the proper relation to the other circuit elements so that the energy of the spark arc is harmlessly dissipated almost entirely. It is the hope and belief of *Questions And Answers* that you will work out the solution to the difficulty you have encountered in the operation of the device you are designing.

Questions and Answers will be glad to discuss this subject more fully if desired.—*Jay G. Mitchell.*

Officers of South Dakota Telephone Association, back row (l. to r.): M. H. HIRT, Sioux Falls, director; KENNETH CONNERS, Jefferson, director; ROY G. PRICE, Highmore, director; KENNETH HAUGE, Alexandria, director. Front row (l. to r.): L. J. ARMENTROUT, Armour, sec.-treas; MARCUS EASTBY, Sinai, 1st vice pres.; P. F. ORCUTT, Custer, pres.; J. W. TOBIN, Plankinton, 2nd vice pres. **(For complete story see page 58)**



. . . *The story of Weather*

Everybody talks about the weather—but how many know what causes it?

"Why does it snow?" asks a curious child. "And what makes the wind?"

"Why doesn't it rain?" complains a worried rancher. And the next week his cattle may be drowned in floods.

What causes lightning, thunder, tornadoes, hurricanes? This fascinating subject of weather will be explored, explained and dramatized in the Bell System's next Science Series TV program. You and every member of your family will want to see it.

Make a note on your calendar now to see

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NEW ELECTRONIC SENTRY

DETECTS TROUBLE—SENDS OUT ALARM

By DICK REYNOLDS

Electronic Sentry automatically detects wide variety of abnormal conditions and checks a designated person by telephone.

Conduit Bender

PJ100 IS THE latest addition to the "Powr Jack" line of National Electric Products Corporation's portable "Redege" Benfield Benders for easier "on the job" bending of electrical conduit. It is designed to bend ¾-inch Shearduct and other types of rigid steel conduit, as well as one-inch Xduct Junior metallic tubing.

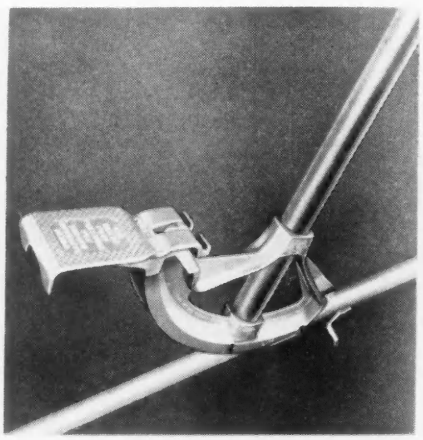
The new one-piece bending tool utilizes the same patented booster step device as the original Powr Jack (PJ125) unit which is used to field bend rigid steel conduit and electrical metallic tubing in the one to 1¼-inch range.

The two position foot treadle booster step provides the means for constant, heavy foot leverage to assure smooth, true radius bends.

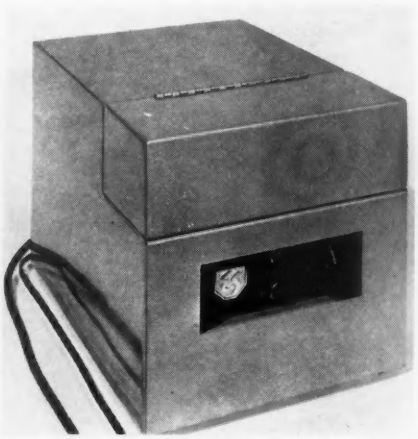
A third NE Benfield Powr Jack model — for bending ¾-inch tubing and one-inch rigid steel conduit — is being readied for production.

Each of the Powr Jack units is in addition to the standard line of NE "Redege" Benfield Benders, available in three sizes for field bending ½-inch and ¾-inch rigid conduit and ½-inch through one-inch tubing.

In addition to the two position, foot-treadle booster step, other features of the PJ100 "Redege" Benfield Bender include an integral back pusher to true up and straighten bends, and a safety collar for handle thread protection. The hook portion of the bender is equipped with outrigger stabilizers to provide firm balance. — For complete data, *Check New Product* 226.



New portable bender is designed for "on the job" bending of ¾-inch Shearduct and other types of rigid steel conduit, as well as one-inch Xduct Junior Metallic tubing.



The "Electronic Sentry," a new safety device that will detect trouble or potential trouble, such as fire, theft, water level, temperature, pressure or any abnormal condition.

"Electronic Sentry"

ELECTRONIC Secretary Industries, Inc., has introduced a new unit capable of electronically and automatically detecting a wide variety of abnormal conditions and of alerting a designated person by telephone.

The device, known as the "Electronic Sentry," is designed to provide an instant, automatic alert to personnel responsible when the possibility of danger due to fire, pressure, water levels, temperature, theft or any other hazardous conditions exist.

When an alert condition occurs, a primary detecting device such as a thermostat, a pressure control, a capacitive burglar detector, a water level measuring gauge, or any control capable of closing a switching circuit, causes the "Electronic Sentry" to go into action.

The "Electronic Sentry" will then (1) connect itself across the telephone line, (2) dial a pre-determined telephone number electronically, and

(3) by means of a pre-recorded message, inform the person who answers of the nature of the trouble. The warning message is transmitted repeatedly so that if it is not understood the first time, repetition will insure comprehension. At the end of a pre-determined time, the unit will disconnect momentarily from the telephone line. If the condition that caused the warning is not corrected, however, the "Electronic Sentry" will again dial the number and repeat the warning message until the warning message is acted upon.

The unit, of compact and rugged construction, is 8 inches wide, 8¼ inches high, 11¼ inches long and weighs 17½ pounds. It consists of the primary detection device, specially designed record player, electronic relay amplifier and audio amplifier.—For complete data, *Check New Product* 227.

One of new line of truck bodies recently introduced by J. H. Holan Corp. The bodies range from a one-man combination truck to a two-man maintenance truck with aerial ladder. Each body features a new rub-rail that keeps water from dripping into the compartments.

Truck Bodies

A NEW LINE of five cable splicer bodies has been announced by J. H. Holan Corp., 4100 W. 150th St., Dept. TE&M, Cleveland 11, Ohio. The bodies range from the TS-172, a one- man combination unit, to the CS-102L, a 2-man maintenance truck with aerial ladder.

Several new Holan body features appear on this line of cable splicers. They feature a new rub rail that keeps water from dripping into the compartments, a new indented door handle and a stiffer, stronger fender. All bodies are made of strong, rust-resistant high-tensile steel.

The TS-172 and the TS-172C are for ½-ton chassis. The former is a one-man runabout used for cable splicing, maintenance, and initial inspection. The latter, which has room for tent carriers and lead sleeving, is used for construction and cable splicing.

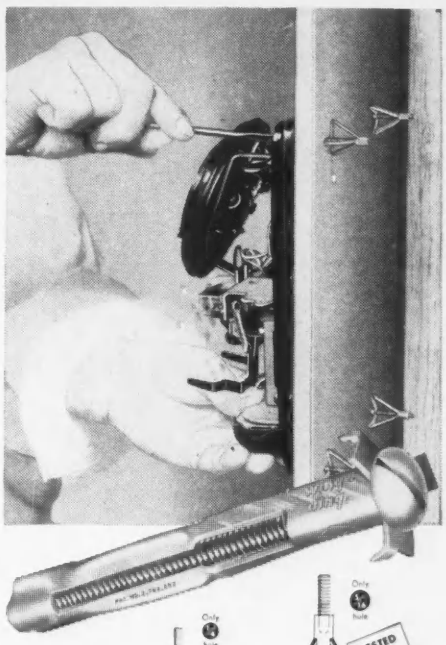
The CS-490 is larger and is made for a ¾-ton chassis. Primary use is maintenance. A special of this model is available with dual rear tires.

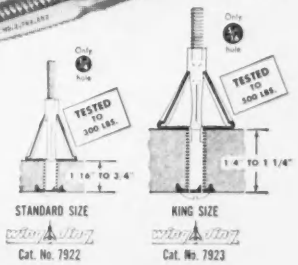
The CS-102 is a one-man cable material delivery truck for mounting on a one or 1½-ton chassis. It has dual rear tires. The CS-102L is essentially the same unit except for the addition of an aerial ladder. It is used for aerial cable work, patrolling, inspection and emergency.—For complete data, *Check New Product* 228.

New Wall Anchor

THE "Shorty Wing-Ding," a new hollow wall anchor specifically designed for use where clearance between partitions is small, has been announced by the Diamond Expansion Bolt Co., Inc.

The Shorty is used in fastening fixtures to plaster board or other wall paneling that has been secured to ¾-inch furring strips fastened to old wall surfaces. The limited clearance afforded by the furring strip makes use of conventional wall anchors impossible. *Continued on next page*





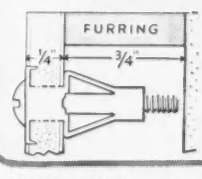
Dependable
TELEPHONE
Installations
with the versatile

wing-ding®

HOLLOW WALL ANCHOR

ONLY 3 SIZES for all applications
SMALLEST SIZE HOLE of any hollow wall anchor
POSITIVE SETTING with TRI-PRONG action
STRONG, ONE-PIECE, tripod design
EASY TO INSTALL, no special tools required
REMOVABLE, if necessary

NEW shorty



For furred wall board, hollow doors, etc. Space "in back" can be as little as ¾-inch! Panel thickness can be ⅛" to ⅜". Specify size 4SS.

WING-DINGs are perfect for securing objects to hollow walls, floors, ceilings (wallboard or lath and plaster), glass, ceramic tile, plywood, sheet metal, etc.

WING-DINGs
like all other DIAMOND products are sold only through jobbers and distributors.

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EXPANSION BOLT CO., INC.
GARWOOD, NEW JERSEY
A complete line of Fasteners for Masonry and Hollow Walls
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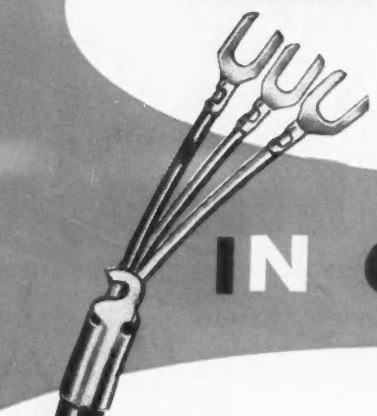
SETS

IN COLOR



In colors to match all telephones and trimmed to fit all makes, Whitney Blake's famous TELECORD Sets are now available in hand set and line cords in lengths up to 25 feet.
TELECORD, noted for the toughness of its jacket under adverse conditions, is the logical replacement cord.
TELECORD, never frays and is highly resistant to abrasion, perspiration, humidity, oil and grease.
Specify Whitney Blake Replacement Sets in black or colors when ordering from your independent telephone supply house.

INDEPENDENT

WB

10-8

WELL BUILT WIRES SINCE 1899

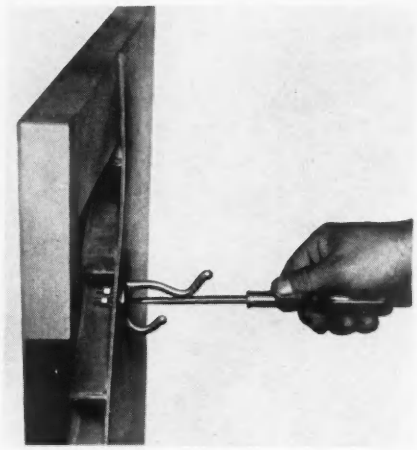
WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT

(Continued from page 47)

Another application of the Shorty is in mounting fixtures on the hollow core doors that are becoming so increasingly popular in new home construction and existing home modernization.

One inch in length, the Diamond anchor requires a 1/4-inch hole and will work on panels with thicknesses from 1/16 to 3/8-inch. Tested for weights up to 200 pounds, the Shorty needs as little as 3/4-inch clearance between partitions. For further information, *Check New Product* 616.



New hollow-wall anchor is designed for use when clearance between partitions is small. Anchors require 1/4" hole and will work on panels with thicknesses from 1/16 to 3/8 inch.

New Suttle Loud Ringers

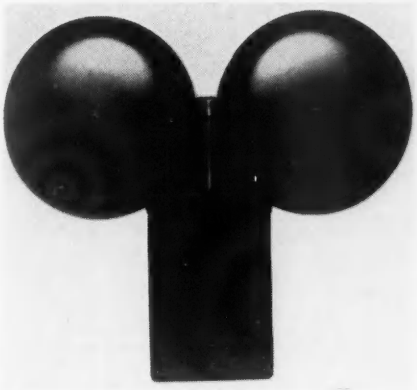
A WATER-PROOF gasket has been applied to the top cover of the Suttle Equipment Company's new six-inch, loud-ringing harmonic bells, making them weather-proof, the company has announced.

By positioning the unit properly, with the bells down, the ringer is now protected against the entrance of moisture. This new feature makes the Suttle loud ringing bell ideal for

IF YOU DO not see a listing in these columns of products or services you are interested in, write "Buyers' Directory," 7720 Sheridan Road, Chicago 26, Illinois, for such information. It will be furnished quickly and without charge.

use outdoors or under conditions where moisture content in the air is exceptionally high.

Made with a cast iron base and finished in weather-proof baked enamel, the bells are available with



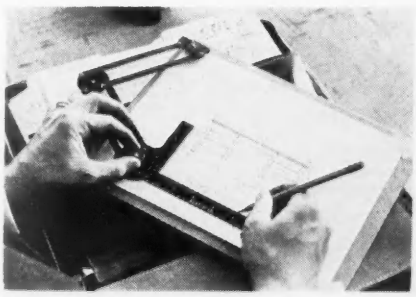
Water proof gasket applied to top cover makes these bells completely waterproof.

harmonic, decimonic, synchromonic or straight line frequencies.

These bells are recommended for use in factories, processing companies, feed mills, machine shops, transportation terminals, on farms, and for all telephone company subscribers who need a bell that will ring out clearly above all shop noises or for long distances. For further information, *Check New Product* 229.

Portable Drafting Machine

A NEW-DESIGN portable drafting machine, so compact that it can be folded jackknife-style to fit in the



New, portable drafting machine can be folded jack-knife style to fit in pocket when unit is detached from its drawing board.

pocket when detached from its drawing board, has been introduced by David Miller & Assoc.

Called "Draftette," the precision instrument is now available attached to a portable drawing board that fits

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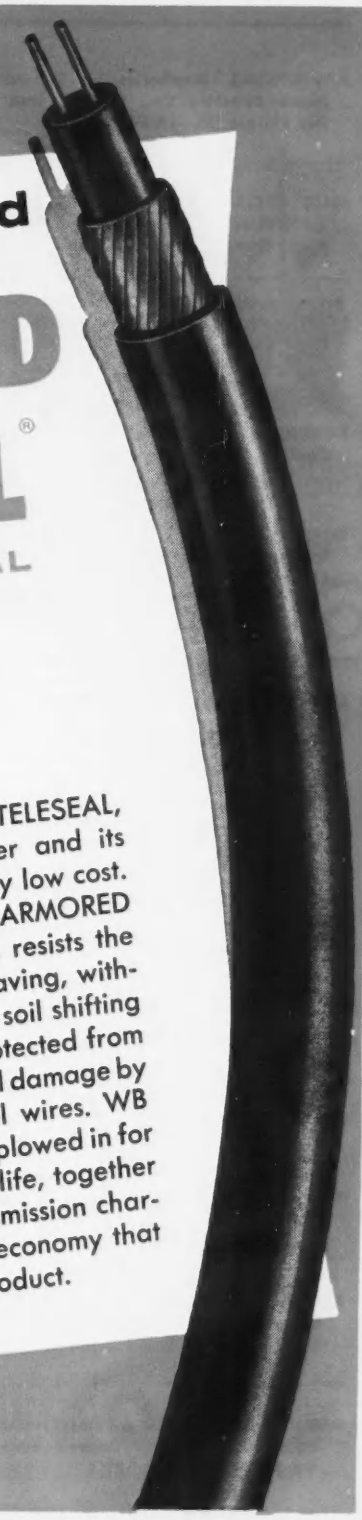
WB plastic jacketed ARMORED TELESEAL, because of its smaller diameter and its lightness, is handled at unusually low cost. Designed for direct burial, WB ARMORED TELESEAL is impervious to rot, resists the stresses resulting from frost heaving, withstands the abrasion caused by soil shifting and rock movement and is protected from rodent, termite and mechanical damage by the served armor of flat steel wires. WB ARMORED TELESEAL may be plowed in for additional economy. Its long life, together with its stable electrical transmission characteristics give you the true economy that comes only with a quality product.



WB

3-8

WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT

WELL BUILT WIRES SINCE 1899

INDEPENDENT

ADVERTISING, Directories — *General Telephone Directory Co., 1800 Oakton Street, Des Plaines, Ill.*—[ADV. 1]

BELTS — CLIMBERS — COMPLETE LINEMEN'S EQUIPMENT, *W. M. Bashlin Co., Bashlin Bldg., Grove City 1, Pa.*—[ADV. 2]

BOOTHS—Acoustic Telephones — *Sherron Metallic Corp., 1202 Flushing Ave., Brooklyn 6, N. Y.*—[ADV. 3]

BORING MACHINES, EARTH — *Highway Trailer Co., Edgerton, Wisc.*—[ADV. 4]

CORDS, Switchboard (with or without plugs), Instrument (retractable and regular) and Operators — *Commercial Cord & Supply Co., Inc., 26 Main St., Clifton Springs, N. Y.*—[ADV. 5]

CORDS, Switchboard & Telephone — *Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago 41, Ill.*—[ADV. 6]

PIPE PUSHERS — *Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa.*—[ADV. 7]

POLES, Southern Yellow Pine — *Kennedy Saw Mills, Box 54, Shreveport, Louisiana* — [ADV. 8]

POLES, Southern Yellow Pine — *Taylor Colquitt Company, 217 E. Main St., Spartanburgh, S. C.*—[ADV. 9]

POLES, Southern Yellow Pine — *Texas Creosoting Co., Orange, Texas.*—[ADV. 10]

PROTECTIVE EQUIPMENT — *Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.*—[ADV. 11]

REBUILT TELEPHONES & SWITCHBOARDS — *Tallen Co., Inc., 159 Carlton Ave., Brooklyn 5, N. Y.*—[ADV. 12]

TELEPHONE EQUIPMENT AND SUPPLIES — *Telephone Repair & Supply Company, 1760 Lunt Avenue, Chicago 26, Ill.*—[ADV. 13]

WIRE, Insulated — DATED DROP WIRE — Neoprene or Weatherproof — *Alphaduct Wire & Cable Co., New Brunswick, N. J.*—[ADV. 14]

WIRE, Insulated Drop and Bronze or Copperweld — *Acorn Insulated Wire Co., Inc., 36 Freeman St., Pawtucket, R. I.*—[ADV. 15]

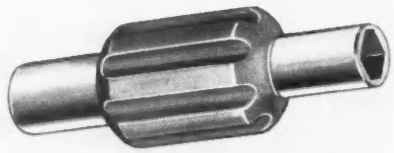
easily into a briefcase. The unit takes the place of T-square, ruler, protractor and triangles. It is suggested for use wherever drawing, drafting, sketching and designing with high accuracy is required.

"Draftette" is of all aluminum construction, anodized jet black with gleaming white-filled numbers and letters of the scale and 180-degree protractor. Use of aluminum accents the lightness, long life and dimensional stability of the unit.—For complete data, *Check New Product* 230.

Terminal Wrench

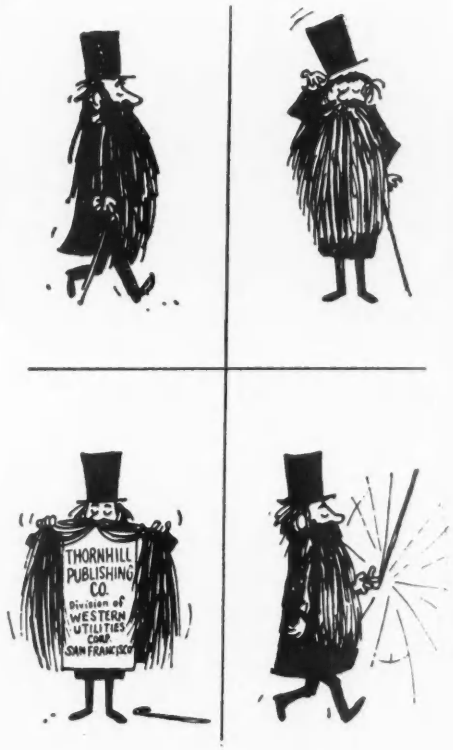
RELIABLE ELECTRIC CO., Dept. TE&M, Franklin Park, Ill., has announced production of a new terminal wrench (Catalog No. 15).

The wrench is pocket-size (3″x1″) and is equipped with 3/8″ and 7/16″ hex ends which are deep



New terminal wrench is pocket-size (3″ X 1″) and is equipped with 3/8″ and 7/16″ hex ends.

enough to accommodate long terminal posts. The plated steel hex ends are separate pieces molded in red phenolic, thus insulating one end from the other.—*Check New Product* 231.



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ADV. 11..... ADV. 12..... ADV. 13..... ADV. 14..... ADV. 15.....

industry NEWS briefs

Temporary Rates Authorized For Two New York Companies

THE NEW YORK Public Service Commission has authorized Allegany Telephone Co. and Jasper-Steuben Telephone Corp., both subsidiaries of Independent Telephone Corp., to make temporary increases in their respective rates effective January 1. The temporary rates will remain in force pending the outcome of a current PSC investigation to determine the permanent rates to which the two companies are entitled.

Allegany Telephone Company serves about 1,700 telephone stations through dial central offices in Alfred, Andover and Almond. It had originally proposed to increase residential rates on October 1. That tariff was suspended and has since been the subject of public hearings. It provided for increases of from 75 cents to $1.40 monthly for residential service through its Andover and Alfred offices. Business rates would have been increased by amounts ranging from $1.25 to $2.25 through the Almond exchange and by from 85 cents to $1.50 through the other two exchanges.

The temporary rates authorized last month provide for flat increases of 65 cents monthly for service through the Almond office and of 50 cents monthly for service through the Andover and Alfred offices.

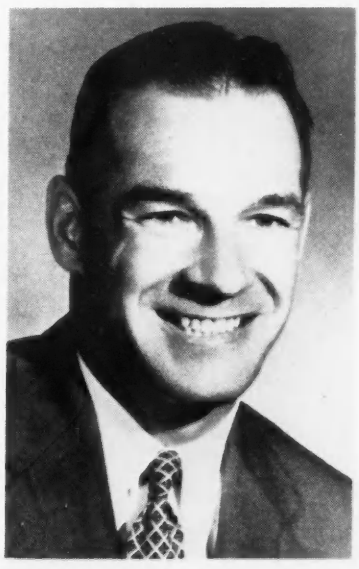
Jasper-Steuben furnishes dial service to 268 subscribers through a central office at Jasper and magneto service to 77 others in the towns of Greenwood and West Union through a switchboard owned and operated by the Greenwood Telephone Association.

The new rates which it is being allowed to put into effect temporarily are the same as those it sought to introduce on October 1 and which have also been under suspension and investigation.

Increases which Jasper-Steuben was allowed to put into effect temporarily are: Jasper dial exchange — Residential service, five and ten-party, 50 cents; two-party, $1.10; individual line $1.00; Business service — five or ten-party, $1.10; two-party, 65 cents; individual line, 20 cents.

For magneto service through the Greenwood exchange, multiparty residential and business rates will be increased 75 cents monthly, individual line residential service will be increased by $1.00 and individual business rates will be increased by $2.50.

The commission's actions were predicted on data received at public hearings which indicate that unless the two companies receive some increase they will have insufficient revenues with which to pay interest on outstanding notes and dividends on preferred stock.



FORREST STROUD, former plant extension engineer at General Tel. Co. of Calif., has been named chief engineer for General Tel. Co. of Ohio and Ohio Consolidated Tel. Co. Stroud, who joined General of Calif. as a cable splicer's helper in 1947, held various positions in the engineering departments in Santa Barbara, San Bernardino, and Santa Monica, before he was named plant extension engineer.

Arkansas Telephone Property Sale OK'd

THE Arkansas Public Service commission has approved sale of telephone properties at Yellville and Cottel, Ark., but the prices approved were less than that agreed to by the seller and buyer.

The Standard Telephone Co., had applied for authority to sell the properties of the Yelcott Telephone Co., for $33,000. Yelcott also had agreed to pay R. L. Thomas, one of the owners of Standard, $200 a month for 40 months as a retainer in an advisory capacity.

The PSC said its staff had determined the properties should be valued at $26,765, and the commission authorized the sale at a price not to exceed $29,600. It also denied monthly payments to Thomas.

Two Kansas Independents Granted Temporary Rates

TWO KANSAS telephone companies have received Kansas Corporation Commission permission to install temporary higher rates to be collected under bond upon conversion of exchanges to dial operation.

They are the American Communications Co., Belleville, with exchanges at Esbon, Green, Lebanon, Burr Oak

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You get exactly *what* you want when you order from Kellogg and it is delivered when specified. No broader line of telephone supplies is available anywhere. Kellogg warehouses are stocked with only one purpose in mind: To serve the needs of the independent telephone company. Kellogg has the largest inventory of the supplies *you* need. Men who are thoroughly trained in telephone practices assist you with your orders . . . help to make certain you get exactly *what* you want, *when* you want it.

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Instrument Catalog

A NEW "self-file" testing equipment catalog is now available from Boonton Electronics Corp. This illustrated and descriptive catalog offers complete specifications, typical applications and performance curves on voltmeters, capacitance bridges, distortion meters, and UHF grid dip meters. This equipment along with its accessories gives wide application to electronic testing, measuring and control. Also included are prices and ordering information.

Cable Splicer Brochure

J. H. HOLAN Corporation is offering a 4-page, two-color brochure for those interested in cable splicer bodies. The new brochure has photos, uses, design features and specifications for five bodies ranging from a one-man combination unit to a 2-man maintenance unit with a mechanically-operated hydraulic ladder.

Radio Equipment

BROCHURE from Budelman Radio Corp., illustrates and gives technical data on Budelman's 890-960MC Radio equipment, type 14BW. The unit has been accepted by the Federal Communications Commission for use under part 21 (common carrier) of the Commission's Rules.

Equipment Manual

A HANDY new Equipment Manual has been issued by Precision Equipment Co. as an aid to executive planning. In it are clearly described and illustrated, the newest products and inventions for both plant and office.

This attractive, pocket-size Equipment Manual describes such products as the All-in-One Combination Cabinet with its hidden vault and the new Wonder Air Tank, a solution to tough cleaning problems throughout the plant, as well as such standard equipment as cork-back bulletin boards, a wide variety of workbenches, desks and the latest developments in factory and office seating.

Mobile Equipment Brochure

GENERAL Electric's Communication Products Department has published a new brochure on two-way mobile radio equipment available to both the technically-inclined and to those who are interested in appearance features.

The booklet shows the wide range of equipment designed to fit individual needs based on present FCC rulings. It also tells how today's units are being engineered with future needs in mind, taking into consideration such factors as future FCC policies which may affect both public and private radio systems.

Described in detail are various items which help make a radio system more flexible.

"Opportunities in Electronics"

SKILLED technicians are still in great demand in the growing field of electronics, according to an industry-wide survey by the Cleveland Institute of Radio Electronics.

The survey indicated that the tremendous rate of growth in the electronics industry during the past 10 years will be maintained, thus providing more job opportunities than ever before. Employers will hire new technicians for mobile radio installation, radio and television broadcasting, military, airline and industrial electronics as well as for other rapidly-expanding fields.

An informative 24-page booklet, titled "Opportunities in Electronics for You," has been designed to provide pictorial coverage of opportunities. Its purpose is to stimulate interest in electronics as a career for qualified men.

Antenna System Computer

ANDREW CORP., manufacturers of parabolic antennas and microwave transmission line systems, has recently developed a system computer which will enable communication engineers to rapidly and accurately calculate parabolic antenna radiation characteristics, passive repeater performance, free space and "Scatter Propagation" attenuation, and thermal and equivalent noise input of receiver.

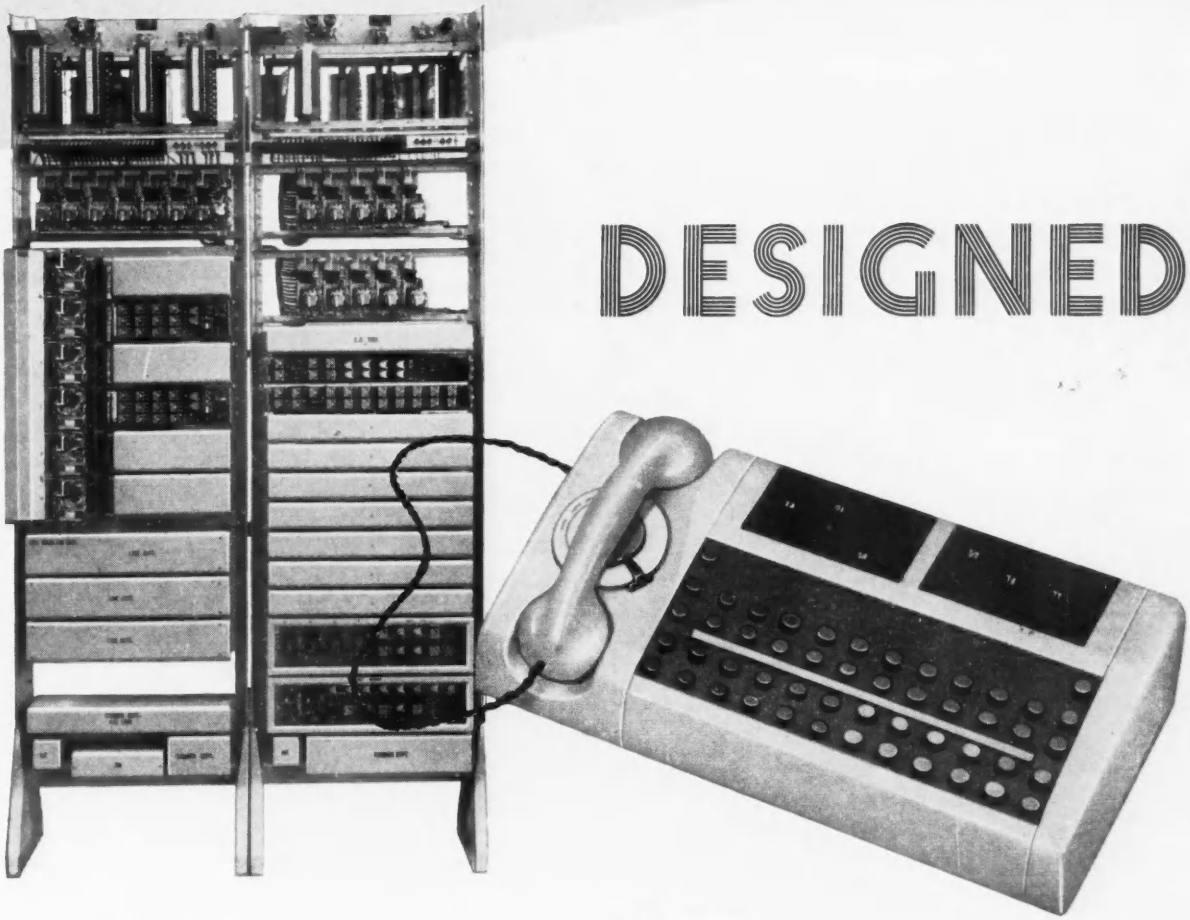
The reverse side of the computer is a Transmission Line and Waveguide Selector on which attenuation and power ratings, as well as other electrical and mechanical characteristics, are shown. The handy conversion rule facilitates computation of transmission line efficiency.

The computer is available to communication engineers at no charge.

Tractor Maintenance Guide

A NEW D7, D8 and D9 Tractor Maintenance Guide has been prepared by Caterpillar Tractor Co., Peoria, Ill. The 24-page booklet has more than 75 full color drawings of helpful hints for obtaining optimum service life from Caterpillar-built equipment. Written in narrative form, it tells the story of how one tractor owner learned to keep his machine on the job with lower maintenance costs. Cartoon-type drawings help point out good maintenance practices.

This feature helps you obtain technical bulletins, catalogs and literature. To obtain your copies write Readers' Service Department, 7720 N. Sheridan Rd., Chicago 26, Ill.



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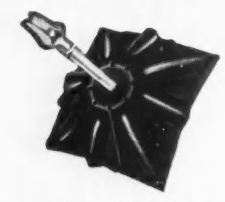


8-WAY EXPANDING

The guy load is distributed all around the anchor—no wasted space between blades. Usually installed in clay or loam.

NO-WRENCH SCREW

For hand or machine installation. Pitch-controlled blade goes down faster and adds to holding power in sandy soil, soft clay or loam.

NEVER-CREEP

Made of structural steel. Pulls *entirely* against solid, undisturbed earth. For extra heavy loads in clay or loam.

CROSS-PLATE

For heavy-duty anchoring in machine-bored holes. Holds better than logs or slugs. Saves time and money.

SWAMP SCREW

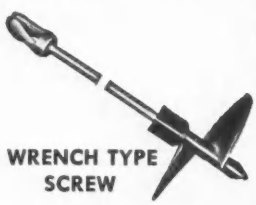
For swamps, marshes, quicksand, river crossings or seasonally flooded areas. Screws down deeply by adding sections of pipe.

8-WAY CONE

Acts as inverted wedge. Flaring base and flat faces increase wedging action. Used in rocky areas with rock wedging.

EXPANDING ROCK

No grouting necessary. The greater the pull, the tighter it wedges against solid rock. Set in 2" drilled hole.



WRENCH TYPE SCREW

All steel—double arc welded. Anchor hub absorbs installation strain. For light loads in sandy soil, soft clay or loam.

POLE KEY ANCHOR

Keys poles at the butt to reinforce them against unbalanced loads in soft soil. Ideal for congested urban areas.

Both the soil type and condition are important factors in determining the type of installation and the kind of anchors to use. That's why Chance Anchors are made in so many types and sizes. The anchors shown above are made in a wide variety of sizes. Each type is designed for certain soil and guying conditions. Each of these anchors will do its specific job better than any other anchor you can choose.

Good news for your guys! Get "Anchoring," the most complete anchor installation guide ever developed... it's FREE. Write today!

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and Republic, and the Home Telephone Co., Geneseo, with exchanges at Geneseo and Galva.

KCC officials said the telephone companies will be allowed to collect the dial rates for about one year before full hearings are held to determine permanent rates. If the permanent rates are set at a lower level than the temporary charges, the companies would be required to make refunds to customers.

In another action, the KCC granted Craw-Kan Telephone Co. permission to buy the Uniontown Mutual Telephone Co. and convert its exchange to dial operations as soon as financing can be obtained from the Rural Electrification Administration.

Lincoln T&T Announces Supervisory Appointments

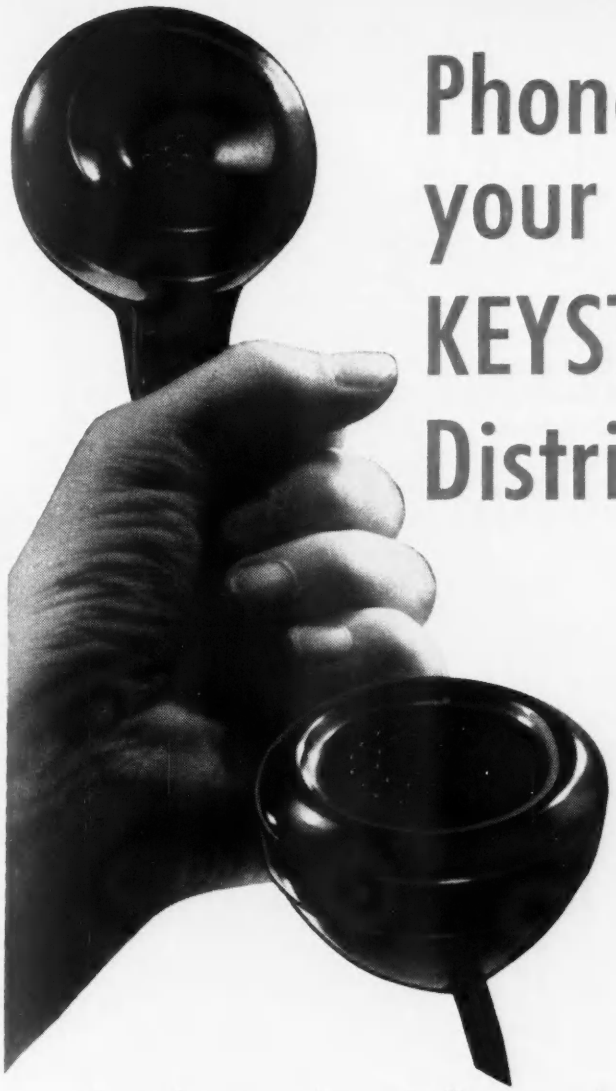
SUPERVISORY appointments by The Lincoln (Neb.) Telephone & Telegraph Co. were announced last month by Merle M. Hale, vice president.

Area Manager George D. Brock of Crete has been appointed engineer in the chief engineer's department at Lincoln. Manager Charles J. Novak of Ashland becomes area manager at Crete. James W. Cruickshank, eastern district clerk, becomes manager at Ashland.

Brock joined the company in 1927 as a groundman after graduation from the University of Nebraska with an A. B. degree. He became a lineman in 1928 and in 1935 moved to Hastings as an installer and repairman. He was appointed manager at Friend in 1942 and area manager at Wilber in 1944 before moving to Crete as area manager in 1952.

After working eight years with the Citizen's Telephone Co. at Malmo, Novak joined LT&T in 1945 as an installer and repairman at Wahoo. He became manager at Milford in 1953 and manager at Ashland in 1954.

Cruickshank graduated from the University of Nebraska with a B. S. degree in 1950 and then joined the company as an installer and repairman at Wahoo. He moved to Lincoln in 1952 as district clerk.



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Nelson Electric Supply Co.
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Chattanooga, Tennessee

Suttle Equipment Company
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Wire for the Telephone Industry

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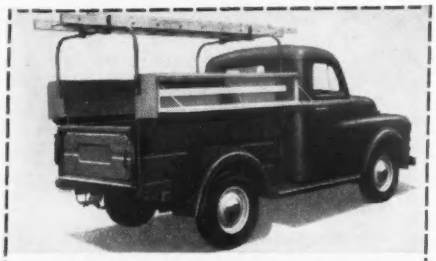
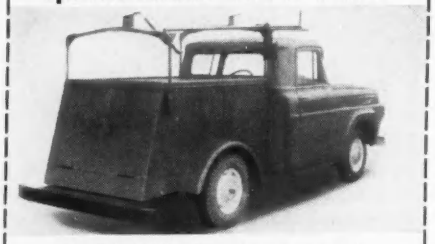
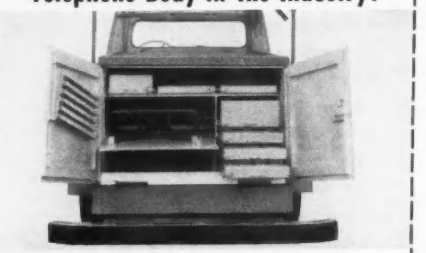


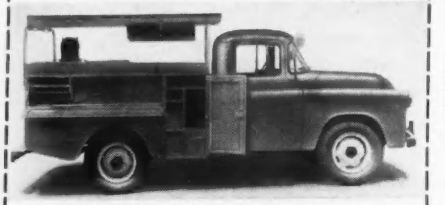
Stahl Side Boxes — convert pick-ups into efficient Service Trucks.



Stahl TMI-76 — Lowest-cost Telephone Body in the Industry!



Stahl TMI-76 — Engineered and built to rigid specifications.



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South Dakotan's Meet At Sioux Falls

86 Attend 53rd Annual Meeting; P. F. Orcutt Elected President

By L. J. ARMENTROUT*, Secretary-Treasurer

THE FIFTY-THIRD Annual Convention of the South Dakota Telephone Association was one of the best attended sessions for many years with 86 people registered. Meeting at the Cataract Hotel, Sioux Falls, the conventioners heard addresses by: W. R. Hays, sales manager, Northwestern Bell Telephone Co.; C. C. Doherty of the South Dakota Public Utilities Commission; J. B. Adkins of the Exide Storage Battery Co.; C. P. Jorgenson of the research and planning division, South Dakota Department of Highways; Bruce D. Gillis, commissioner of revenue, Pierre; D. E. Misfeldt, utility valuations engineer; and E. L. Kaiser, cable supervisor, Northwestern Bell Telephone Co., Sioux Falls.

Presenting a paper titled "Are You Selling Your Service?" Mr. Hays stressed that the day of "order taking is over." "Selling," he said, "goes hand in hand with Public Relations. A good selling job reflects good Public Relations."

He further emphasized that any selling program had to be led very enthusiastically by the "*boss man.*"

Commissioner Doherty commended the telephone industry in South Dakota for the large strides taken since the war and related some of his experiences as chairman of the NARUC, pointing out some of the problems on a national level and how they compared to the various state levels.

Discussing storage batteries Mr. Adkins said, "A battery is like an insurance policy — you have to have an office failure to collect. This is what telephone people must guard against through proper maintenance of their batteries."

He stressed that simply being unfamiliar with the theory of batteries and their method of operation has proved costly to many telephone companies and said batteries are relatively simple to understand if "one uses the information obtainable from battery manufacturers."

Mr. Jorgenson addressed the group on "New Highways and Utilities." His talk centered around the Planning Division's responsibilities toward the public and the assistance the public could give this office. He indicated that highway planning is not much different than planning for telephone systems.

"Designing highways for the public due to the improved modes of travel is a never ending job," he said, "leaving the planners in the position of gazing in the crystal ball trying to foresee what the requirements will be 10 or 15 years in advance.

Mr. Jorgenson said the public can assist the Planning Division in procuring right-of-way for the new super highways.

"Everyone knows about our Highway Program and what the trend of roads of the future will have to be like," he said, "but the acquisition of right-of-way for such highways could be a costly bottleneck without understanding and cooperation from everyone. . . "

Discussing taxes Mr. Gillis, and his assistant, Mr. Misfeldt reported that in 1954 there were 753 telephone companies operating in South Dakota. Twenty of these were not-taxable because they were government owned and operated. 652 of these companies had an assessed value in 1955 of $16,140,618 and paid taxes on an advalorem basis of $808,212.73, based on the same tax rate as all other property. 81 companies made no report, and paid no taxes.

"In 1955 your legislative bodies created the 2 percent gross receipts tax law for such rural telephone companies that could qualify," said Mr. Misfeldt. "The net result was that 25 companies had an advalorem assessed

Manager, Souris River Telephone Mutual Aid Corp., Minot, N. D.

value of $20,573,456 and paid a tax, $924,677.71. 401 companies had gross receipts of $825,594 and at 2 per cent paid $16,519.08 distributed wholly to such local school districts that produced the gross receipts. 203 companies made reports, but the net gross receipts were less than $50.00 so no tax assessments were made. 39 companies made no report."

He reported that in 1957 South Dakota had a total of 687 companies; 14 government owned and operated companies. 21 companies had an ad-valorem assessed value of $21,637,075 amount of taxes to be determined by local tax rates payable in 1958. 398 companies had a total gross receipts of $1,149,897 and paid a tax of $22,997.94, distributed wholly to such local school districts that produced the gross receipts. 159 companies made reports on gross receipts, but amounts were less than $50.00 gross so no tax was spread. 89 companies made no reports.

"I am sure," he said, "it is your feeling that all companies should at least file a report with the Commissioner of Revenue. However, the 1955 law made no clause for penalty for not filing their reports, so after several letters reminding these delinquent companies we could go no further."

The final speaker, E. L. Kaiser discussed "Your Cable — What About It?" His talk dealt mainly with plastic insulated cable, the various attachments and fixtures associated with this cable, and maintenance procedures.—*L. J. Armentrout*

Kansas Phone Firm Granted Rate Hike

THE United Telephone Co. of Kansas has been granted a temporary annual rate increase of $296,130, pending a formal hearing. The company serves 58 exchanges. The higher rates became effective in all exchanges except Altamont, on January 1.

The Kansas corporation commission said rates for the average domestic subscriber will be boosted 50 to 75 cents a month and the average business telephone, $1 to $1.25 a month.

GENERAL MACHINE PRODUCTS COMPANY, INC.
Old Lincoln Highway at Pa. Turnpike, Trevose, Pa.

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Cable Benders
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Coaxial Cable Tools
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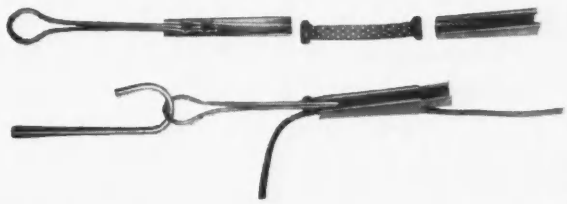
DROP WIRE CLAMPS



#7380 Type B Drop Wire Clamp consisting of three piece unit, constructed of aluminum with stainless steel bail and designed to hold a large selection of size and style of wires without harm to the outside covering due to the unique wedge action. Packaged 25 per carton with 20 cartons per standard package. 500 Wt. 27 lbs.

#7408 Type C Drop Wire Clamp is similar to the Type B except constructed of brass instead of aluminum, ideally suited for shore conditions. Packaged 25 per carton, with 20 cartons per standard package. 500 Wt. 78 lb.

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CUT ALL YOUR PLANT MEASURING COSTS IN HALF
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MEASURING WHEEL
ONE MAN CAN TAKE MEASUREMENTS FASTER, EASIER, ACCURATELY!

Have you ever considered how much time is consumed in taking outside plant measurements? You can cut that time *at least* in half by using a Rolatape Model 400 Measuring Wheel. Equipped with the Rolatape, *one man* can accurately and easily take measurements at a normal walking speed . . . and the total is automatically recorded in full view of the operator. These features guarantee a real saving in man-hours and money!

You can measure with confidence when you measure with Rolatape, because accuracy is assured by its scientifically calibrated counting mechanism. Simple to operate, Rolatape measures and records total as it is rolled along. Handle folds compactly for easy storage and handling.

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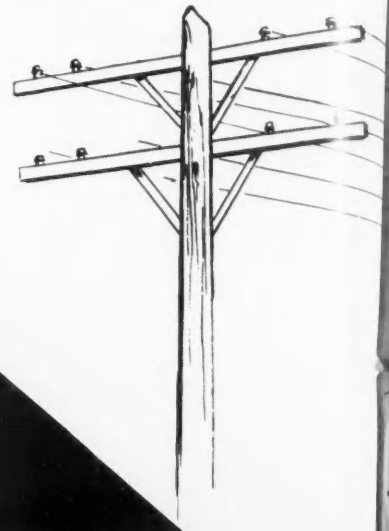
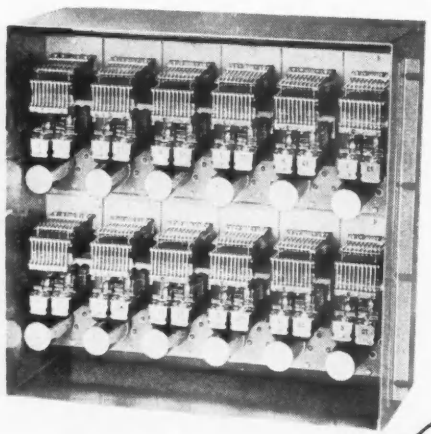
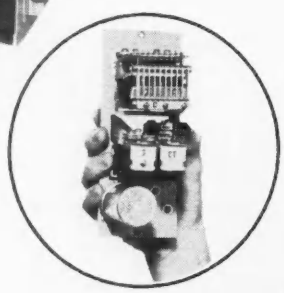


Typical relay case
for Ringing Converter





Relative size of
unit assembly of
Ringing Converter

The UNIVERSAL
Code-to-Selective Ringing
Converter employs
simple circuits with the
magnetic impulse counter,
together with other
standard relay apparatus
of recognized
manufacture.

Other UNIVERSAL Telephone Equipment:
UNIVERSAL COMPUTER INTERCEPT
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INDEPENDENT

"EASY TO INSTALL" UNIVERSAL RINGING CONVERTER!*

MODERN SERVICE DEMANDS SELECTIVE RINGING

Selective ringing has become a "must" to maintain customer relations, but the cost of modification of earlier dial units to full selective ringing is often excessive . . . in material, engineering and especially for the installation. The UNIVERSAL Code-to-Selective Ringing Converter unit is a simple applique circuit which places the majority of the wiring modification on a factory basis, thus reducing the installation time to a minimum. Most installations can be performed by maintenance personnel. Your company will benefit from increased revenue that can be expected with selective ringing because of increased station rates and increased party line fill.

*Pat. Pend.

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Mail this coupon to the nearest address.

Gentlemen: I am interested in your Universal RINGING CONVERTER

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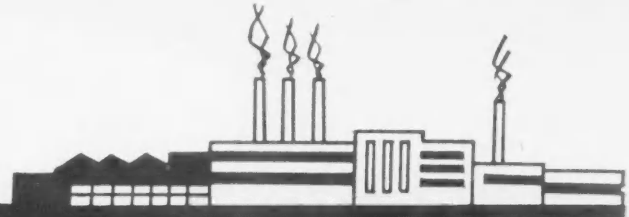


suppliers NEWS briefs

Directory Men Meet At Dayton

L. M. Berry & Co. Managers Meet;

1958 Sales-Service Programs Studied

MEETING TO discuss ways to increase revenue and give better service to the more than 250 telephone companies it serves, L. M. Berry & Co. mapped out the most challenging program of its 48-year history during the firm's Management Conference in Dayton, Ohio, on December 9 through December 12, 1957. Attending the annual meeting were 44 territory managers, division managers, and members of the division staff and general sales staff.

Opening the conference by introducing the new company theme, "Ac-SELL-erate In '58," General Sales Manager John W. Berry emphasized it would be necessary to "Ac-SELL-erate" all phases of company operations in order to meet 1958 objectives and telephone company expectations. His review of 1957 operations, covered sales, personnel, training, methods, art, and sales promotion activities.

General Art Director Phil Engle discussed display advertising, and described the development and results of finished display ads made available to the field for the first time last year. He reviewed the progress of the company's art departments and emphasized the need for good coordination between sales managers and art directors.

General Art Supervisor R. J. Burke discussed art production analyses and pointed out methods and personnel considerations involved in production, and General Sales Supervisor J. W. Craig, Jr. closed the first day of discussions with a talk on supervisory training, in which he reviewed the contents of the course, outlined plans for giving it to all first-line supervisors, discussed personnel to attend, and emphasized the necessary follow-through by management. By the middle of 1958 all supervisors will have taken the course, he stated.

Craig opened the second day with a presentation of the company's personnel progress and problems, which included a review of 1957 personnel studies and recommendations for the procurement of more and better salespeople, as well as the improvement of interviewing techniques.

The remainder of the session was devoted to a discussion of sales training methods and techniques by Sales Training Supervisor S. H. Rainey, who emphasized the importance of good follow-up training procedures for new sales personnel at the field level, and presented a newly developed sales retraining course which is to be conducted by each division early in 1958.

General Sales Supervisor Craig and General Sales Assistant R. E. Shearer opened the third day of the meeting with a joint presentation of "Musts for 1958," in which they detailed specific improvements in planning, supervision, and sales that would be demanded by the 1958 goals. The need for all management to adjust to present-day economic conditions was stressed throughout.

Sales Promotion Manager R. W. Brundige rounded out the session with a talk on "The Division Manager and Sales Promotion," in which he stressed the importance of carrying out sales promotion at the field level, and introduced a new planning system designed to aid field management in coordinating their sales promotion activities.

The final day of the conference was opened by Sales Promotion Supervisor J. W. Egnor, who emphasized the importance of "Recognition" in sales promotion, and outlined ways of making company and division publications more effective.

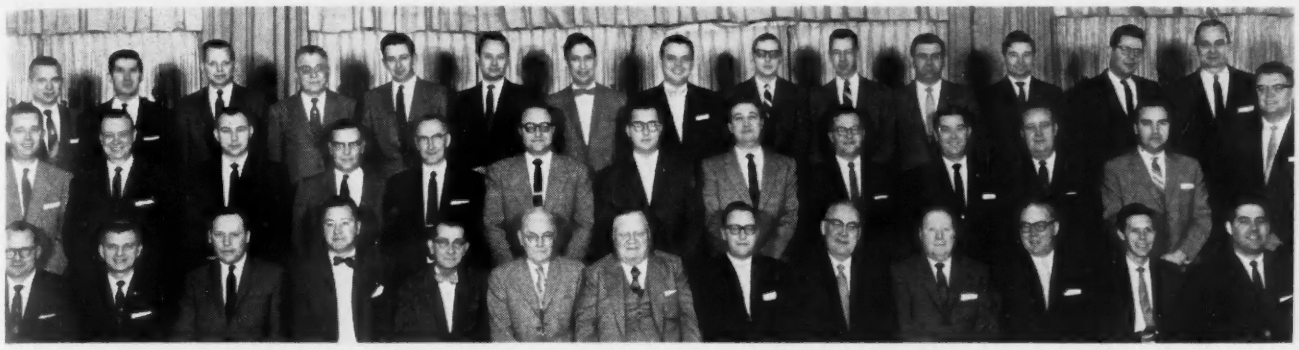
He was followed by Sales Promotion Manager Brundige with a discussion of "Sales Aids," in which he described the development and effectiveness of a new visual sales aid designed for use in small towns, and told of revisions made in other sales aids.

J. W. Egnor then outlined the Yellow Pages Emblem promotion being carried on by both telephone companies and L. M. Berry & Co., and introduced a new presentation folder designed to promote emblem usage by advertsiers.

This talk was followed by the presentation of the "1958 Incentive Program" by R. W. Brundige, who unveiled the 1958 sales incentive contests, discussed the new year's plans to stimulate all sales personnel to the maximum.

General Sales Manager Berry then gave a talk entitled, "You Are Management," in which he discussed principles of management, responsibilities and duties of management, and efficient and economic management as applied to company operations. He then closed the conference, at which time each conferee was given an opportunity to say a few words, and each man was also presented with a gift as a memento of the occasion.

The 1957 Management Conference



L. M. BERRY & CO. CONFEREES:—First row (l. to r.): C. A. Smith, Ala. div. mgr.; J. M. Bayley, Eastern sales mgr.; J. W. Craig, Jr. general sales supv.; H. F. Scott, Mid-Western territory mgr.; R. A. Maner, Fla. div. mgr.; W. A. Steuer, general mgr.; Loren M. Berry; John W. Berry, general sales mgr.; F. L. Hawker, Eastern mgr.; W. J. McGirl, Southern sales mgr.; E. F. Tinnerman, Wisc. div. mgr.; R. H. Eshelman, La. div. mgr.; W. C. Welch, Ky. div. mgr.; SECOND ROW (l. to r.): Phil Engle, general art director; S. H. Rainy, general sales training supv.; J. D. Beckham, Miss. div. mgr.; H. C. Hull, statistician; B. D. Addington, Mid-Eastern div. mgr.; J. D. Bristow, Mid-Western div. supv.; N. E. Robinson, Ohio div. mgr.; M. F. Feeney, La. div. sales mgr.; H. C. Evans, Mid-Western div. mgr.; J. B. Bowen, Ky. div. supv.; H. Goldsworthy, Tenn. div. mgr.; E. W. Beaney, N. Y. div. supv.; J. E. Whalen, Wisc. div. supv. THIRD ROW (l. to r.): J. W. Nagel, N. Y. div. mgr.; K. R. Jeffers, Western div. mgr.; J. J. Mullin, personnel methods supv.; J. L. Bowling, Fla. div. supv.; R. J. Burke general art supv.; S. E. Phillips, Mid-Western territory staff assistant; R. T. Davis, Pa. div. mgr.; R. E. Shearer, general sales assistant; J. W. Egnor, sales promotion supv.; W. R. Calhoon, auditor; L. E. Hurrelbrink, Ala. div. supv.; R. W. Aleff, Wisc. div. sales supv.; J. C. Grimes, Ohio div. supv.; R. W. Brundige, sales promotion mgr.

was the 8th of its kind since the inception of the series in 1950. According to Mr. Berry, this year's conference was the largest and most successful ever conducted by L. M. Berry & Co. The meeting was followed by supervisory conferences in each of the company's 13 sales divisions.

Lorain Products Corp. Opens Midwest Office

PAUL STOCKER, president, Lorain Products Corp., has announced the opening of new sales office at 9500 W. Ogden Ave., Office D., Brookfield, Ill. The office is under the supervision of Eldon W. Miller, sales engineer, who represents Lorain Products in Chicago, and the Middle West and Southwest areas.

Southern Nevada Tel. Company Plans Expansion

THE SOUTHERN Nevada Tel. Co. has started a five-and-one-half million dollar expansion program which includes the construction of two new central office buildings with an ultimate of 10,000 lines each. At present the company has over 36,000 stations.

Kellogg Switchboard & Supply Co. will furnish equipment for a new crossbar tandem office and 25 positions of toll board to augment the present toll system.

Rotary switching equipment of U. S. Instrument Co. manufacturer, purchased from Graybar Electric Co., will be installed in the two new central offices. The initial order provides for 6600 terminals.

"The rapid growth of this resort city has already taxed facilities of the four units of central offices completed for dial conversion only three years ago," said H. G. O. Weiler, president. "The urgency of meeting equipment requirements for this rapid growth was one of the factors considered in ordering equipment from two manufacturers.

Motorola Names Jones District Microwave Mgr.

APPOINTMENT of Richard G. Jones as district manager, western area, for Motorola's microwave and industrial control products has been announced by Walter C. Byrne, microwave national sales manager, Motorola Communications & Industrial Electronics Division.

Jones has been with Motorola since February, 1956 as an industrial communications sales representative in the Midwest area. He will direct microwave sales activity in the 10-state Western area from Motorola's Burlingame, Calif., office.

Chester Cable Corp. Completes Plant Expansion

Chester Cable Corp., a subsidiary of Miami Copper Co., has announced completion of the three steps of its plant and facilities expansion.

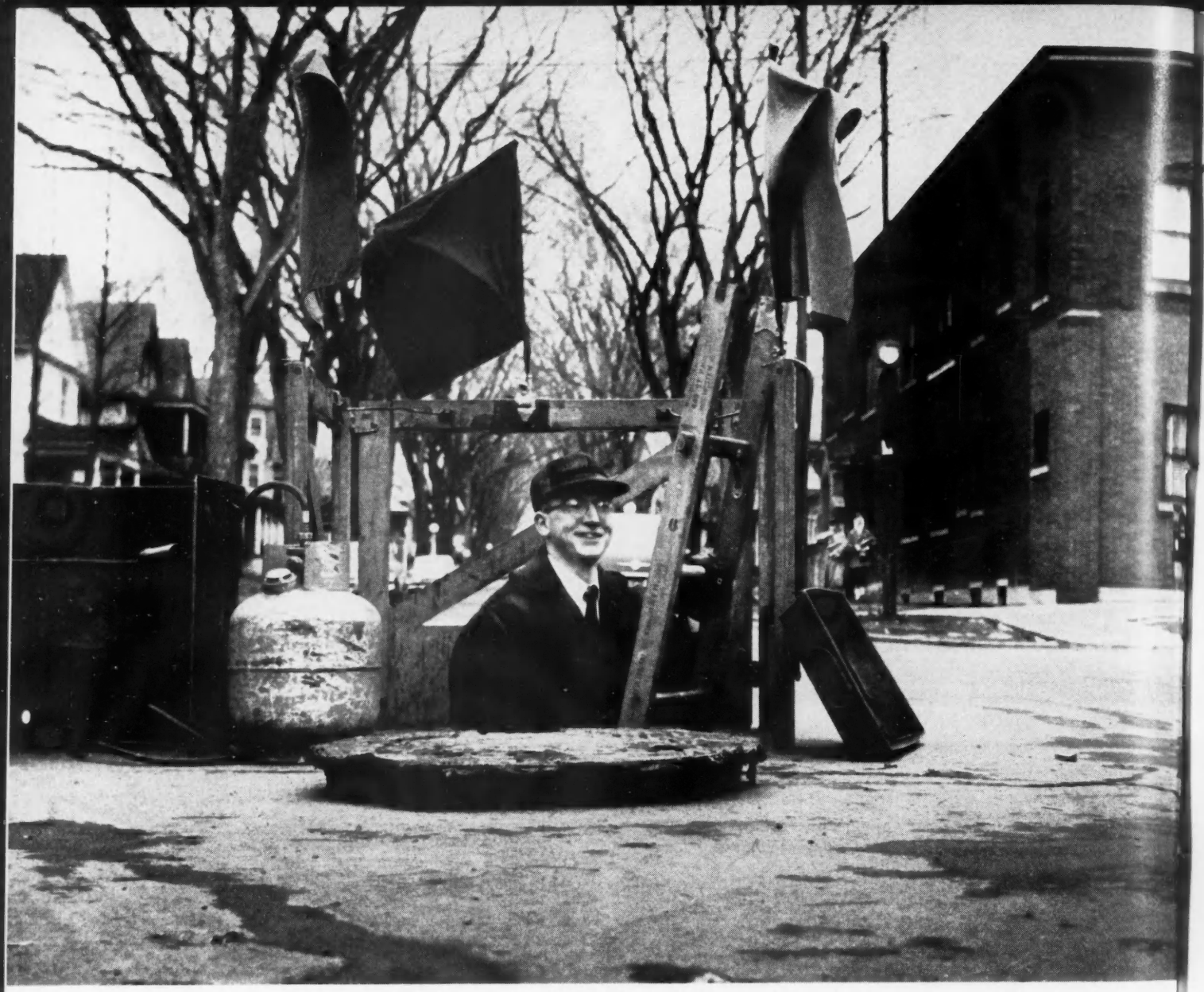
Total available plant area is now 200,000 square ft. of floor space, an increase of 75,000 square ft. The three phases completed included: Increased production capacity which necessitated additional storage area for raw materials as well as added production machinery and new processes, and enlargement of laboratory personnel and equipment for research, and lastly, the setting up of larger experimental sections for testing of both materials and finished products.

All phases of the Chester plant program are completed and the plant is in full production. The decision by Chester to increase facilities was necessitated by a steadily increasing demand for their plastic coated, teflon wrapped, extruded teflon and nylon coated wires and cables. The recent expansion is the fourth since the company pioneered the manufacture of plastic insulated wires in 1940.

Chester Cable Corp. manufactures a wide range of insulated wires and cables from miniature hook-up wires to armored cable and mine blasting cables. As a subsidiary of Miami Copper Company, Chester is in a position to control quality from mine to finished product.

Chester plastic coated wires and cables are marketed under the tradenames Plasticord and Plasticote. Gen-

Please turn to page 65



John Garbutt, Inside Sales—Rochester, likes to get to the bottom of things.

On top of the situation . . . from below

You can see that John Garbutt of our Rochester sales office won't hesitate to go underground or do anything else necessary to make sure your supply orders are properly serviced.

John and all the other members of our nationwide distribution setup make it their business to get to the bottom of your needs for construction and maintenance supplies. Years of experience have taught them that you have 4 principal requirements.

They are: quality products, fast delivery, personalized service, and careful attention to all orders, regardless of size.

This kind of thinking is typical of a company that operates a full-time research program to bring you new and better telephone equipment. Your supply orders help us keep this program going and growing.

Do you have a supply problem that needs careful attention? Try the Stromberg-Carlson branch office in your area.

In Rochester our Sales Office and Warehouse is located at
1040 University Avenue
Telephone HUbbard 2-2200

"There is nothing finer than a Stromberg-Carlson"

S-C

STROMBERG-CARLSON

A DIVISION OF GENERAL DYNAMICS CORPORATION

SALES OFFICES: Atlanta 6, Chicago 6, Kansas City 8, Rochester 3, San Francisco

GD

Electronic and communication products for home, industry and defense

(Continued from page 63)
eral offices and plant are located at 40 Hill St., Chester, N. Y. The company has sales representatives in all principal cities in the United States and abroad.

Fuseless Station Protectors Now UL Approved For Open Wire

RELIABLE ELECTRIC Company's fuseless station protectors, Cat. Nos. 700, 800 and 801, have been tested and are now approved by Underwriters' Laboratories, Inc., for use in circuits connected to *open wire*. These same protectors have been approved on similar circuits from *cable* since June, 1951.

Improved station protection can be obtained where the following conditions are met as set forth in Article 800, paragraph 8011-d-3 of the National Electrical Code (current Edition, 1956) for fuseless station protectors.

"Where insulated conductors, in accordance with 8021-c-1 and 8021-c-2 are used to extend circuits to a building from other than grounded metal-sheathed cable, provided (a) the protector is approved for this purpose and (b) the protector grounding conductor is connected to a water pipe electrode or the grounding conductor or grounding electrode of a multi-grounded neutral power system and (c) the connections of the insulated conductors to the exposed plant or the conductors of the exposed plant shall safely fuse at currents less than the current-carrying capacity of the protector used."

The "connections" of line (c) normally consists of 2½′ to 4′ section of No. 20 AWG copper covered steel insulated wire connected between the line wire and the station drop wire. The code does not limit the size of the drop wire between the bridle wire and the station protector.

The Reliable station protectors No. 700, 800 and 801 are approved and listed for use on the basis that a short length of bridle wire having a fusing current not greater than No. 20 AWG 40% copper covered steel be employed between the open line wire and the drop wire to the station protector.

C & D Names Salesman For Charlotte, N. C.

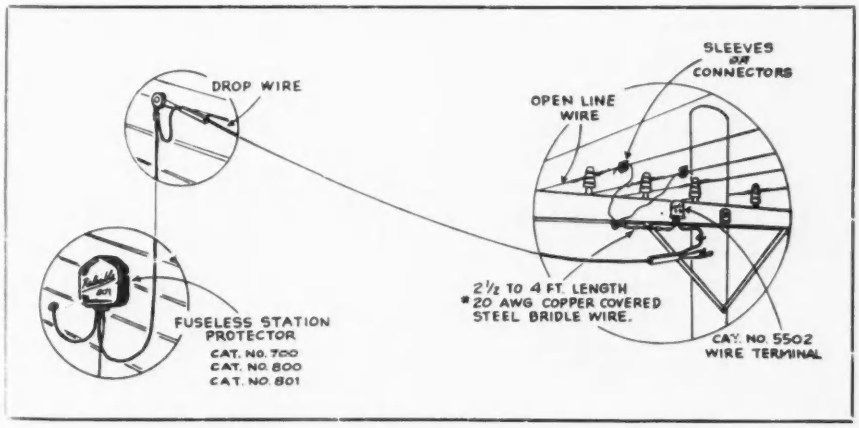
WILLIAM G. BAYNARD has been named new sales representative for C & D Batteries, Inc., in the Charlotte, N. C. area, the company has announced.

In his new Charlotte assignment as sales representative for C & D Batteries, Baynard will be associated with C & D's Atlanta sales office, headed by Mark C. Pope.

Stromberg-Carlson Names Pouk to New Position

RALPH W. POUK, JR., of Stromberg-Carlson's Chicago branch office, has been appointed industrial sales representative in that area, according to an announcement by Edgar R. Sears, Sr., manager of industrial sales of the company's Telecommunication division. Stromberg-Carlson is a division of General Dynamics Corp.

Pouk will represent Stromberg-Carlson's Industrial Sales Depart-


DROP WIRE
SLEEVES OR CONNECTORS
OPEN LINE WIRE
2½ TO 4 FT. LENGTH #20 AWG COPPER COVERED STEEL BRIDLE WIRE.
FUSELESS STATION PROTECTOR
CAT. NO. 700
CAT. NO. 800
CAT. NO. 801
CAT. NO. 5502 WIRE TERMINAL

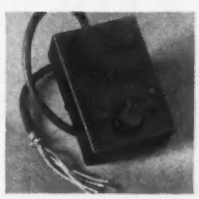
Installation procedure for fuseless station protectors.

How to stay on top of special needs

You have many subscribers whose needs are special—people who need something out of the ordinary to make their telephones more useful. We can help—here are two good examples taken from among the products we handle:

HANDS-FREE TELEPHONE: much more than just an instrument to provide conversation without the need to hold a handset, this telephone is superior to others on the market because (1) it takes less than 15 minutes to install; (2) it gives the user privacy; (3) its microphone is separate and non-directional; you can place it wherever convenient.

RECEIVER-AMPLIFIER RA-1000: this compact, transistorized device provides improved telephone service for the hard-of-hearing. It also boosts signal strength on long-distance calls or on conference hookups. It is compatible for use with any standard telephone, desk or wall-mounted.



The Stromberg-Carlson Branch Office and Warehouse in your area has these and other special-application instruments in stock.

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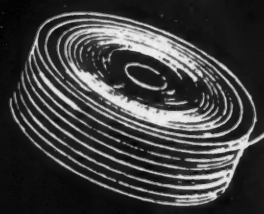
Sales Offices: Atlanta 6, Chicago 6, Kansas City 8, Rochester 3, San Francisco

SPINNING WIRE
FOR EVERYNEED
STEEL
ALUMINUM
STAINLESS STEEL
COPPER
COPPERWELD
TO FIT ANY SPINNER



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CABLE SPINNING EQUIPMENT CO.
3100 TOPEKA AVE.
TOPEKA KANSAS

Serving the growing Independent telephone industry

OVERSEAS SALES:
Ericsson Corp. of New York
Automatic Electric of Canada
Pirelli of Great Britain

RALPH POUK

ment in the Central States area. In this position he succeeds Milton Ferry, who is returning to Rochester for a new assignment with the industrial sales group.

General Tel. Expects Gross Sales Of Half-Billion In 1958

GENERAL TELEPHONE System expects gross sales of about a half billion dollars in 1958, with about 60 per cent of this amount coming from the sale of telephone service to users, President Donald C. Power of the General Telephone Corp. said, Jan. 8, in an address before the business outlook conference of the Los Angeles Chamber of Commerce.

Mr. Power, stated while discussing the long-range prospects of his company that the General System expects to triple the number of telephones it serves in the next 20 years,

During the present year, he said, "we will have capital expenditures of around $200,000,000."

"Actually," he said, "the growth in demand for telephone service may not be quite as lusty as during the past two years, on a percentage basis, but it still represents a husky growth picture. It may surprise you to know that since 1946 the areas we now serve have grown around 150% in telephones, exclusive of growth due to mergers in our system. In other words, in 11 years, since World War II, we have added 50% more telephones than in all of the previous years of our history."

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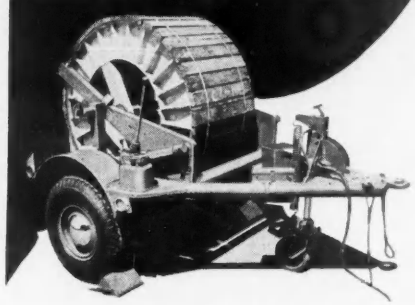

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Kellogg Names Olszyk Public Relations Mgr.

LOUIS OLSZYK has been appointed public relations manager for Kellogg Switchboard & Supply Co., a division of International Telephone & Telegraph Corp., George T. Scharffenberger, Kellogg president, announced last month. Olszyk will also direct the firm's advertising program and IT&T's public relations activities in part of the Midwest.

For the past nine years director of public relations and assistant director of industrial relations for Curtiss Candy Co., Olszyk is a native of Milwaukee, Wis., was graduated from Marquette University in 1939 and later attended the University of Chicago's school of business. He was a reporter and assistant picture editor for the *Milwaukee Journal* before enlisting in the U. S. Marine Corps during World War II. He was recalled to service with the Marines during the Korean conflict.

Prior to Curtiss, Olszyk was public relations field director of the Veterans Administration for Illinois, Indiana and Wisconsin, and later served as administrative assistant to the director of the State of Illinois Service Recognition Board which administered that state's soldiers' bonus.

Du Mont Names Two Regional Sales Managers

APPOINTMENT of a southern and midwestern regional sales manager for Du Mont's two-way radio communications operation has been announced by Joseph A. Ricca, product manager of the mobile communications department, Allen B. Du Mont Laboratories, Inc.

Joining with William M. Gagney, previously announced eastern manager, the two appointees — Rondal L. Miller for the south and Howard Larsen for the midwest — make up three-fourths of a new regional sales management team responsible for direction and planning of field sales and distribution of the company's two-way radio equipment. To date, 31 states are covered by regional sales managers for the operation.

Previously, the mobile communi-

Please turn to page 70

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HOLTZER-CABOT, 150 watt, four frequency ringing machine (16-⅔, 33-⅓, 50, 66-⅔) equipped with tone head and eleven contact interrupter. Was originally equipped with magnetic clutch but has been replaced with a Reeves Pulley for speed adjustment. Was originally purchased in 1948. Good condition. Inquire: Mr. H. E. Chapman, Intra State Telephone Company, Galesburg, Illinois Telephone 4501.

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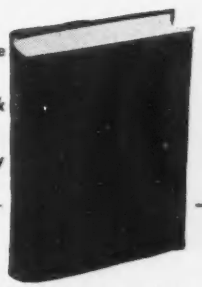

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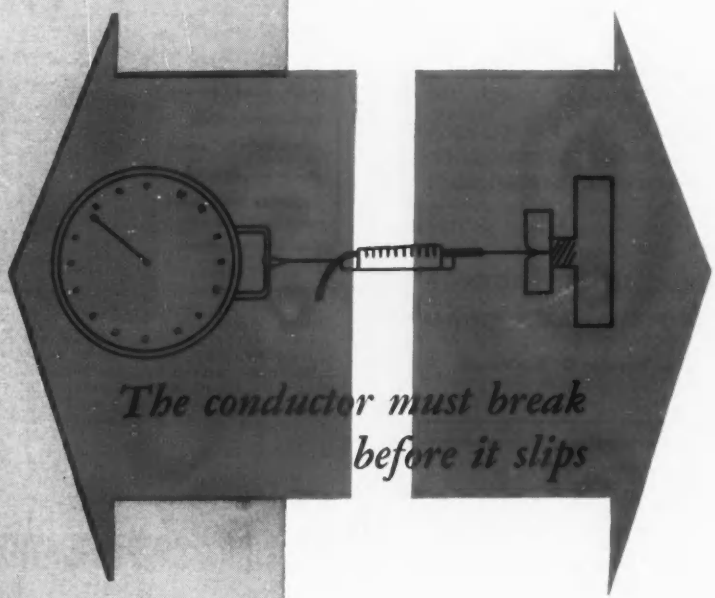

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(Concluded from page 70)

cations field sales force was supervised directly through Du Mont's home offices at Clifton, New Jersey.

Operating from Du Mont's southern regional headquarters for mobile communications at Dallas, Texas, Miller will supervise the field organization in Texas, Oklahoma, New Mexico, Arkansas, Florida, Georgia, Alabama, Mississippi, Louisiana, and Tennessee.

From headquarters at Chicago, Ill., Larsen will direct his operation in the states of Illinois, Wisconsin, Minnesota, Iowa, Michigan, Ohio, Indiana, Missouri, Kentucky, Kansas, and Nebraska.

Prior to joining Du Mont, Miller was zone manager for four years in Kentucky and Tennessee areas for Motorola Communications and Electronics, Inc.

Larsen was an electronic parts distributor in Chicago from 1947 to 1956. Prior to that he was an electronics consultant for the War Assets Administration. During war years (World War II), Larsen served as a radar field engineer for Philco Corp. He entered the radio field in 1934.

Collins Radio Advances Carl R. Rollert

THE CENTRAL Region Sales Department of Collins Radio Co., Cedar Rapids, Ia., has announced the appointment of Carl R. Rollert as district representative in Kansas City. He will serve microwave users in his sales area covering Colorado, Nebraska, Kansas, Missouri and southern Illinois.

Rollert was associate field engineer for Collins prior to his Kansas City appointment. An active radio amateur for many years, he was formerly chief engineer of radio station KCRG in Cedar Rapids for three years, and engineering supervisor WDAF-TV, Kansas City. He also served in production and sales for four years with Midwest Engineering Development Co. in Kansas City and four years with Aereon Manufacturing Co. in Kansas City in aircraft radio design.

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Telephone Engineer & Management, February 1, 1958

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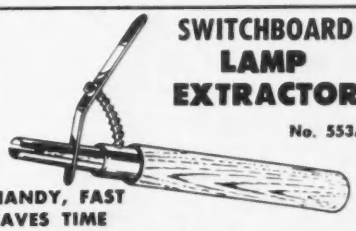

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THE BACK OF THE BOOK

By JOHN G. REYNOLDS

"Pyramid Technique"

THE TELEPHONE is limitless in its uses as a number of Fort Morgan, Colorado, merchants have discovered.

In an attempt to protect themselves against "check artists" some 250 merchants are using the telephone to tip off each other as soon as a bad check passer is at work. Using the old pyramid technique a police officer or a member of the chamber of commerce puts the system into operation by calling two merchants and warning them. These two call two more and so on until the entire group has been notified. Total elapsed time from the first telephone call — an amazing 10 minutes!

"A Telephone First"

REMEMBER BETSY, the Baltimore chimpanzee, whose painting sold at a price to make many full-fledged artists envious? The last we heard, Betsy was still hard at work with her finger paints. And she had gained one other distinction: she's the first chimp to make the "Yellow Pages" where she's listed under "artists" in Baltimore's classified telephone directory.

Maybe it just proves that you can find almost anything in the Yellow Pages — even chimpanzee abstract art!

"How Do You Do??"

SOMEONE with a flair for statistics has figured out how much you can say in a three-minute long distance call. If you talk slowly, you'll average perhaps 150 words. Talking a "blue streak" will let you say about 750 words.

Just by the way of comparison, Lincoln used 267 words in his Gettysburg address. Hamlet's to-be-or-not-to-be soliloquy, by Mr. Shakespeare, ran to 263. If spoken over the telephone they would both be well within the three-minute period. So, quick or slow, a subscriber can say a lot for very little when he picks up his telephone.

"You Figure It Out"

AMONG THE Publications we peruse (*ed:torialese for look at*) is the British *Post Office Magazine*, which, as most of you know, deals with telephone matters, among others. And there, not long ago, we came across a squib which probably transgresses all specs and regulations but still brings a wry humor across the sea:

A trench for cables was being opened when the engineer in charge came along, took a quick look at the work, and cried, "Hi, this trench is dangerous. Tell the foreman it must be shored up."

"He knows already," replied one of the labourers. "We've nearly got to him!"

"Until The Urge Leaves"

IN ADDITION to its many other benefits the telephone is now being used as a panacea for fat people. It seems there is an organization called "Tops." This stands for "Take Off Pounds Sensibly." Whenever one of the plump boys or girls gets an urge to eat between meals, all they have to do is call up a fellow club member and talk with him "until the urge leaves." Just how long it takes to persuade a fat man not to reach for a frosted malted is anybody's guess.

"Lesson From Washington"

IN A RECENT speech, Paul F. Clark, Chairman of the Board of Directors of the John Hancock Mutual Life Insurance Company, told the following story about a little boy who wanted a bicycle:

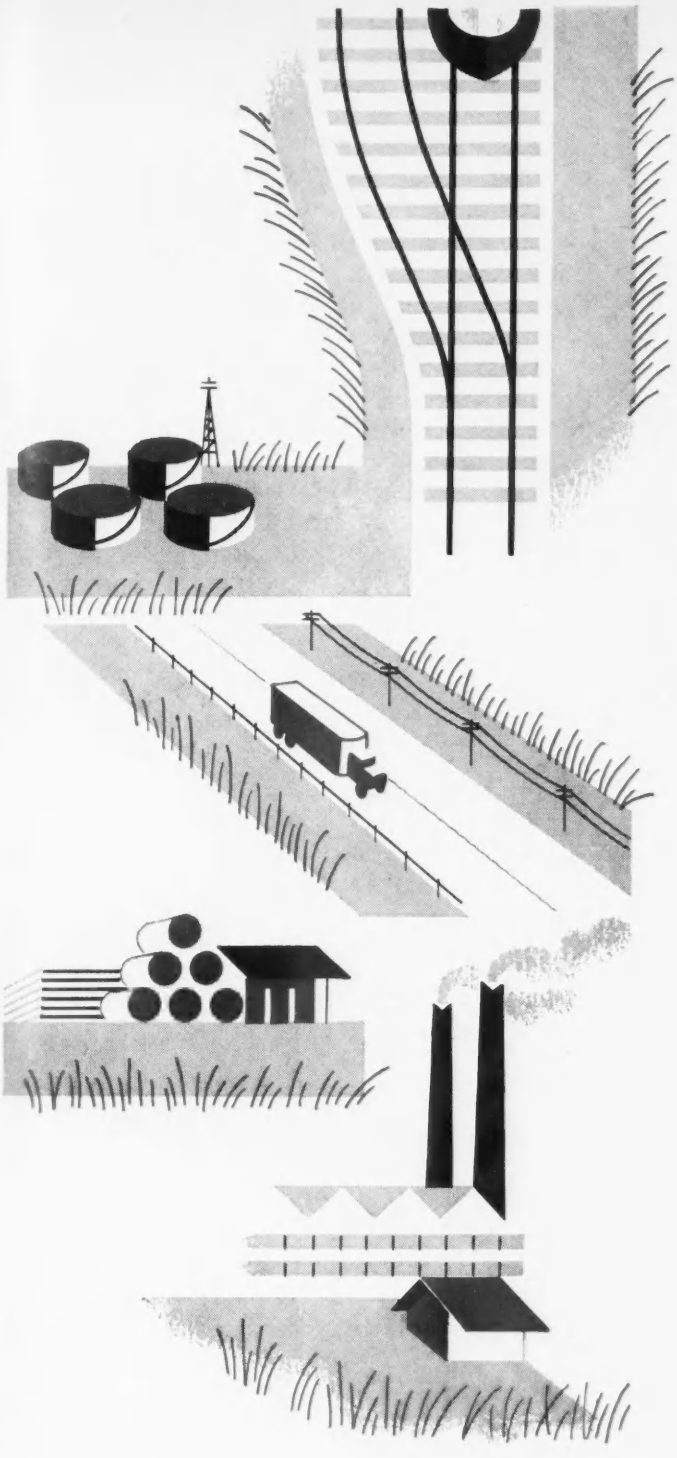
"Now this little boy wanted a very fancy bicycle with lights, and a siren, and a foxtail, and it cost $100. So he asked his father if he could have $100. 'Certainly not,' said his father. 'We don't have that kind of money to spend on bicycles.'

"The little boy learned in Sunday School that if you want something you should pray and ask the Lord for it. He prayed and prayed and at the end of a few weeks he saw no sign of any money.

"So he wrote a letter to the Lord asking for $100. The letter got to Mr. Summerfield, the Postmaster General, and he showed it to the President. Ike got a chuckle out of it and took a $5 bill and put it in an envelope and sent it to the little boy.

"The boy got the $5, but he was disappointed because he had asked for $100. Then he noticed the letter was postmarked Washington. So he wrote another letter to the Lord.

"It said, 'Dear Lord, thank you very much for the money. I noticed, though, that you routed it through Washington and my Daddy says those bandits take 95% of everything they get their hands on, so I only got $5'."



announcing . . .

Geigy

SIMAZIN* 50W

a new pre-emergence herbicide

Now available for long residual control of grassy and broadleaf weeds in driveways, roadways, railroads, walks, paths, industrial sites, around buildings and other non-cropped areas.

NOW YOU CAN STOP WEEDS BEFORE THEY START with Geigy's amazing new pre-emergence herbicide Simazin 50W. Think what *preventive* weed control with Simazin 50W can mean in terms of time and money saved for industries, municipalities, highway commissions, railroads, utilities and any other business or service concerned with the problem of weed control on non-cropped areas.

How Simazin 50W Acts

Simazin 50W, a triazine compound, is not a contact or foliage herbicide, but acts on the plant roots, and should be applied just before germination or emergence for best results. Before using Simazin 50W for long residual weed control, existing plant growth should first be removed by use of a contact herbicide, or by mowing or ploughing under.

Long-Residual, Economical

One pre-emergence application of Simazin 50W applied at the rate of 10 lbs. per acre controls most grassy and broadleaf weeds for about a year. The material is economical and easy to use. At the maximum rate of application, less than ½ lb. is required to treat 1,000 sq. ft.

Controls a Variety of Weeds

Simazin 50W controls a wide variety of grasses and broadleaf weeds including barnyard grass, witch grass, yellow foxtail, wild oats, crabgrass, broadleaf plantain, dandelion, lamb's quarters, pigweed, ragweed, nightshade, purslane, velvetleaf and mustard.

Low Toxicity, Non-Corrosive

Simazin 50W has very low toxicity to humans and domestic animals. It is non-corrosive and can be removed from spraying equipment by merely flushing thoroughly with water.

No Lateral Leaching

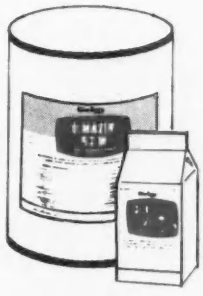
Since there is practically no lateral leaching, Simazin 50W can be used adjacent to crop land and ornamental areas. Lack of phytotoxicity to foliage minimizes drift hazard.

Availability

Geigy Simazin 50W, containing 50% active ingredient is available in cases of 10 x 5 lb. bags and 50 lb. fiber drums.

Free Technical Bulletin

Send for your free copy of the Simazin Technical Bulletin and descriptive pamphlet. Address Department TE-28



*"SIMAZIN" is a trademark of Geigy Chemical Corporation

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